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SEQUENCE LISTING

<110> Adra, Chaker

<120> GRANULOCYTE SUBTYPE-SELECTIVE RECEPTORS AND ION CHANNELS AND USES THEREOF

<130> A0852.70000WO00

<140> Not yet assigned

<141> 2005-03-03

<150> 60/549,865

<151> 2004-03-03

<160> 31

<170> PatentIn version 3.3

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Trp	Phe	Leu	Phe	Gly	Val	Ile	Tyr	Tyr	Ala	Ile	Ala	Phe	Ile	His	Gly	
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Asp	Leu	Glu	Pro	Asp	Glu	Pro	Ile	Ser	Asn	His	Thr	Pro	Cys	Ile	Met	
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Thr Val Glu Ser Thr Ser Ala Val Cys Gln Ser Arg Thr Ser Tyr Ile			
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Pro Glu Glu Ile Tyr Trp Gly Phe Glu Phe Val Pro Val Val Ser Leu			
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tcc aaa aat gga aaa tat gtg gct gat ttc agt cag ttt gaa cag att			1069
Ser Lys Asn Gly Lys Tyr Val Ala Asp Phe Ser Gln Phe Glu Gln Ile			
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Arg Thr Leu Leu Leu Gln Gln Ser Asn Val			
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Phe Gly Val Ile Tyr Tyr Ala Ile Ala Phe Ile His Gly Asp Leu Glu
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Pro Asp Glu Pro Ile Ser Asn His Thr Pro Cys Ile Met Lys Val Asp
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Ala Leu Leu His Gly Asp Leu Asp Ala Ser Lys Glu Gly Lys Ala Cys	
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Leu Val Phe Ser His Asn Ala Val Ile Ala Met Arg Asp Gly Lys Leu
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Cys Leu Met Trp Arg Val Gly Asn Leu Arg Lys Ser His Leu Val Glu
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Ile Asp Glu Asp Ser Pro Leu Tyr Asp Leu Ser Lys Gln Asp Ile Asp
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Asn Ala Asp Phe Glu Ile Val Val Ile Leu Glu Gly Met Val Glu Ala
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Thr Ala Met Thr Thr Gln Cys Arg Ser Ser Tyr Leu Ala Asn Glu Ile
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Leu Trp Gly His Arg Tyr Glu Pro Val Leu Phe Glu Glu Lys His Tyr

- 11 -

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 Met Leu Leu Thr Gly Phe Val Gly Asn Ala Leu Ala Met Leu Leu Val

- 12 -

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ctg tgc atc ggc tgg ctg gcg ctc acc gac ctg gtc ggg cag ctt ctc Leu Cys Ile Gly Trp Leu Ala Leu Thr Asp Leu Val Gly Gln Leu Leu 90 95 100 105			522
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cac atc gac ccg tcg ggg cgg ctc tgc acc ttt ttc ggg ctg acc atg His Ile Asp Pro Ser Gly Arg Leu Cys Thr Phe Phe Gly Leu Thr Met 125 130 135			618
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gag cgg gcg ctg gcc atc agg gcg ccg cac tgg tat gcg agc cac atg Glu Arg Ala Leu Ala Ile Arg Ala Pro His Trp Tyr Ala Ser His Met 155 160 165			714
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ctc gcc ttc gcc ctg ctg ccg gtg ctg ggc gtg ggc cag tac acc gtc Leu Ala Phe Ala Leu Leu Pro Val Leu Gly Val Gly Gln Tyr Thr Val 190 195 200			810
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gca tct cag tcc agt gcc cag tgg ggc cgc atc acg acc gag acg gcc Ala Ser Gln Ser Ser Ala Gln Trp Gly Arg Ile Thr Thr Glu Thr Ala 270 275 280			1050
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- 13 -

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 Ile Ala Val Arg Leu Ala Ser Leu Asn Gln Ile Leu Asp Pro Trp Val
 330 335 340 345
 tac ctg ctg tta aga aag atc ctt ctt cga aag ttt tgc cag atc agg 1290
 Tyr Leu Leu Leu Arg Lys Ile Leu Leu Arg Lys Phe Cys Gln Ile Arg
 350 355 360
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 Tyr His Thr Asn Asn Tyr Ala Ser Ser Ser Thr Ser Leu Pro Cys Gln
 365 370 375
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 Cys Ser Ser Thr Leu Met Trp Ser Asp His Leu Glu Arg
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Ser Val Ser Val Ala Phe Pro Ile Thr Met Leu Leu Thr Gly Phe Val
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Gly Asn Ala Leu Ala Met Leu Leu Val Ser Arg Ser Tyr Arg Arg Arg
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Glu Ser Lys Arg Lys Lys Ser Phe Leu Leu Cys Ile Gly Trp Leu Ala
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Leu Thr Asp Leu Val Gly Gln Leu Leu Thr Thr Pro Val Val Ile Val
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Val Tyr Leu Ser Lys Gln Arg Trp Glu His Ile Asp Pro Ser Gly Arg
 115 120 125

Leu Cys Thr Phe Phe Gly Leu Thr Met Thr Val Phe Gly Leu Ser Ser
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Leu Phe Ile Ala Ser Ala Met Ala Val Glu Arg Ala Leu Ala Ile Arg
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Ala Pro His Trp Tyr Ala Ser His Met Lys Thr Arg Ala Thr Arg Ala
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Val Leu Leu Gly Val Trp Leu Ala Val Leu Ala Phe Ala Leu Leu Pro
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Val Leu Gly Val Gly Gln Tyr Thr Val Gln Trp Pro Gly Thr Trp Cys
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Phe Ile Ser Thr Gly Arg Gly Gly Asn Gly Thr Ser Ser Ser His Asn
 210 215 220

Trp Gly Asn Leu Phe Phe Ala Ser Ala Phe Ala Phe Leu Gly Leu Leu
 225 230 235 240

Ala Leu Thr Val Thr Phe Ser Cys Asn Leu Ala Thr Ile Lys Ala Leu
 245 250 255

- 15 -

Val Ser Arg Cys Arg Ala Lys Ala Thr Ala Ser Gln Ser Ser Ala Gln
 260 265 270

Trp Gly Arg Ile Thr Thr Glu Thr Ala Ile Gln Leu Met Gly Ile Met
 275 280 285

Cys Val Leu Ser Val Cys Trp Ser Pro Leu Leu Ile Met Met Leu Lys
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Met Ile Phe Asn Gln Thr Ser Val Glu His Cys Lys Thr His Thr Glu
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Lys Gln Lys Glu Cys Asn Phe Phe Leu Ile Ala Val Arg Leu Ala Ser
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Leu Asn Gln Ile Leu Asp Pro Trp Val Tyr Leu Leu Leu Arg Lys Ile
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 Leu Leu Phe Trp Gly Cys Cys Val Met His Ser Trp Glu Gly His Ile
 10 15 20

aga ccc aca cgg aaa cca aac aca aag ggt aat aac tgt aga gac agt 152
 Arg Pro Thr Arg Lys Pro Asn Thr Lys Gly Asn Asn Cys Arg Asp Ser
 25 30 35

acc ttg tgc cca gct tat gcc acc tgc acc aat aca gtg gac agt tac 200

- 16 -

Thr	Leu	Cys	Pro	Ala	Tyr	Ala	Thr	Cys	Thr	Asn	Thr	Val	Asp	Ser	Tyr	
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Tyr	Cys	Ala	Cys	Lys	Gln	Gly	Phe	Leu	Ser	Ser	Asn	Gly	Gln	Asn	His	
55					60					65					70	
ttc	aag	gat	cca	gga	gtg	cga	tgc	aaa	gat	att	gat	gaa	tgt	tct	caa	296
Phe	Lys	Asp	Pro	Gly	Val	Arg	Cys	Lys	Asp	Ile	Asp	Glu	Cys	Ser	Gln	
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agc	ccc	cag	ccc	tgt	ggc	cct	aac	tca	tcc	tgc	aaa	aac	ctg	tca	ggg	344
Ser	Pro	Gln	Pro	Cys	Gly	Pro	Asn	Ser	Ser	Cys	Lys	Asn	Leu	Ser	Gly	
			90					95					100			
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Arg	Tyr	Lys	Cys	Ser	Cys	Leu	Asp	Gly	Phe	Ser	Ser	Pro	Thr	Gly	Asn	
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gac	tgg	gtc	cca	gga	aag	ccg	ggc	aat	ttc	tcc	tgt	act	gat	atc	aat	440
Asp	Trp	Val	Pro	Gly	Lys	Pro	Gly	Asn	Phe	Ser	Cys	Thr	Asp	Ile	Asn	
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Glu	Cys	Leu	Thr	Ser	Ser	Val	Cys	Pro	Glu	His	Ser	Asp	Cys	Val	Asn	
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Ser	Met	Gly	Ser	Tyr	Ser	Cys	Ser	Cys	Gln	Val	Gly	Phe	Ile	Ser	Arg	
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aac	tcc	acc	tgt	gaa	gac	gtg	gat	gaa	tgt	gca	gat	cca	aga	gct	tgc	584
Asn	Ser	Thr	Cys	Glu	Asp	Val	Asp	Glu	Cys	Ala	Asp	Pro	Arg	Ala	Cys	
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cca	gag	cat	gca	act	tgt	aat	aac	act	gtt	gga	aac	tac	tct	tgt	ttc	632
Pro	Glu	His	Ala	Thr	Cys	Asn	Asn	Thr	Val	Gly	Asn	Tyr	Ser	Cys	Phe	
		185					190					195				
tgc	aac	cca	gga	ttt	gaa	tcc	agc	agt	ggc	cac	ttg	agt	ttc	cag	ggc	680
Cys	Asn	Pro	Gly	Phe	Glu	Ser	Ser	Ser	Gly	His	Leu	Ser	Phe	Gln	Gly	
	200					205					210					
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Leu	Lys	Ala	Ser	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Thr	Glu	Met	Cys	Pro	
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Ile	Asn	Ser	Thr	Cys	Thr	Asn	Thr	Pro	Gly	Ser	Tyr	Phe	Cys	Thr	Cys	
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cac	cct	ggc	ttt	gca	cca	agc	aat	gga	cag	ttg	aat	ttc	aca	gac	caa	824
His	Pro	Gly	Phe	Ala	Pro	Ser	Asn	Gly	Gln	Leu	Asn	Phe	Thr	Asp	Gln	
			250					255					260			
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Gly	Val	Glu	Cys	Arg	Asp	Ile	Asp	Glu	Cys	Arg	Gln	Asp	Pro	Ser	Thr	
		265					270					275				
tgt	ggc	cct	aat	tct	atc	tgc	acc	aat	gcc	ctg	ggc	tcc	tac	agc	tgt	920
Cys	Gly	Pro	Asn	Ser	Ile	Cys	Thr	Asn	Ala	Leu	Gly	Ser	Tyr	Ser	Cys	
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- 17 -

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Gly Cys Ile Ala Gly Phe His Pro Asn Pro Glu Gly Ser Gln Lys Asp	
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Gly Asn Phe Ser Cys Gln Arg Val Leu Phe Lys Cys Lys Glu Asp Val	
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ata ccc gat aat aag cag atc cag caa tgc caa gag gga acc gca gtg	1064
Ile Pro Asp Asn Lys Gln Ile Gln Gln Cys Gln Glu Gly Thr Ala Val	
330 335 340	
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Lys Pro Ala Tyr Val Ser Phe Cys Ala Gln Ile Asn Asn Ile Phe Ser	
345 350 355	
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Val Leu Asp Lys Val Cys Glu Asn Lys Thr Thr Val Val Ser Leu Lys	
360 365 370	
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Asn Thr Thr Glu Ser Phe Val Pro Val Leu Lys Gln Ile Ser Thr Trp	
375 380 385 390	
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Thr Lys Phe Thr Lys Glu Glu Thr Ser Ser Leu Ala Thr Val Phe Leu	
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Glu Ser Val Glu Ser Met Thr Leu Ala Ser Phe Trp Lys Pro Ser Ala	
410 415 420	
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Asn Ile Thr Pro Ala Val Arg Thr Glu Tyr Leu Asp Ile Glu Ser Lys	
425 430 435	
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Val Ile Asn Lys Glu Cys Ser Glu Glu Asn Val Thr Leu Asp Leu Val	
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Ala Lys Gly Asp Lys Met Lys Ile Gly Cys Ser Thr Ile Glu Glu Ser	
455 460 465 470	
gaa tcc aca gag acc act ggt gtg gct ttt gtc tcc ttt gtg ggc atg	1496
Glu Ser Thr Glu Thr Thr Gly Val Ala Phe Val Ser Phe Val Gly Met	
475 480 485	
gaa tcg gtt tta aat gag cgc ttc ttc aaa gac cac cag gct ccc ttg	1544
Glu Ser Val Leu Asn Glu Arg Phe Phe Lys Asp His Gln Ala Pro Leu	
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Thr Thr Ser Glu Ile Lys Leu Lys Met Asn Ser Arg Val Val Gly Gly	
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ata atg act gga gag aag aaa gac ggc ttc tca gat cca atc atc tac	1640
Ile Met Thr Gly Glu Lys Lys Asp Gly Phe Ser Asp Pro Ile Ile Tyr	
520 525 530	
act ctg gag aac att cag cca aag cag aag ttt gag agg ccc atc tgt	1688

- 18 -

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Val	Ser	Trp	Ser	Thr 555	Asp	Val	Lys	Gly	Gly 560	Arg	Trp	Thr	Ser	Phe 565	Gly	
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Cys	Val	Ile	Leu 570	Glu	Ala	Ser	Glu	Thr 575	Tyr	Thr	Ile	Cys	Ser 580	Cys	Asn	
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Gln	Met	Ala 585	Asn	Leu	Ala	Val	Ile 590	Met	Ala	Ser	Gly	Glu 595	Leu	Thr	Met	
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Asp	Phe 600	Ser	Leu	Tyr	Ile	Ile 605	Ser	His	Val	Gly	Ile 610	Ile	Ile	Ser	Leu	
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Val	Cys	Leu	Val	Leu	Ala 620	Ile	Ala	Thr	Phe	Leu 625	Leu	Cys	Arg	Ser	Ile 630	
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Cys	Phe 680	Phe	Trp	Met	Leu	Val 685	Glu	Ala	Val	Ile	Leu 690	Phe	Leu	Met	Val	
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Cys	Thr 760	Val	Ile	Val	Ile	Asn 765	Ser	Leu	Leu	Leu	Thr 770	Trp	Thr	Leu	Trp	
atc	ctg	agg	cag	agg	ctt	tcc	agt	gtt	aat	gcc	gaa	gtc	tca	acg	cta	2408
Ile	Leu	Arg	Gln	Arg	Leu 780	Ser	Ser	Val	Asn	Ala 785	Glu	Val	Ser	Thr	Leu 790	

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ggt gtc atg gct tac ctg ttc acc atc atc aac agc ctg cag ggg gcc      2552
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Phe Ile Phe Leu Ile His Cys Leu Leu Asn Gly Gln Val Arg Glu Glu
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Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys Pro Ser Ser Gln Ser Gln
855                        860                        865                        870

acc tca agg atc ttg ctg tcc tcc atg cca tcc gct tcc aag acg ggt      2696
Thr Ser Arg Ile Leu Leu Ser Ser Met Pro Ser Ala Ser Lys Thr Gly
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Cys	Lys	Asn	Leu 100	Ser	Gly	Arg	Tyr	Lys 105	Cys	Ser	Cys	Leu	Asp 110	Gly	Phe
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Val	Gly	Phe	Ile	Ser 165	Arg	Asn	Ser	Thr	Cys 170	Glu	Asp	Val	Asp	Glu 175	Cys
Ala	Asp	Pro	Arg 180	Ala	Cys	Pro	Glu	His 185	Ala	Thr	Cys	Asn 190	Asn	Thr	Val
Gly	Asn 195	Tyr	Ser	Cys	Phe	Cys	Asn 200	Pro	Gly	Phe	Glu	Ser 205	Ser	Ser	Gly
His 210	Leu	Ser	Phe	Gln	Gly	Leu 215	Lys	Ala	Ser	Cys	Glu 220	Asp	Ile	Asp	Glu
Cys 225	Thr	Glu	Met	Cys	Pro 230	Ile	Asn	Ser	Thr	Cys 235	Thr	Asn	Thr	Pro	Gly 240
Ser	Tyr	Phe	Cys	Thr 245	Cys	His	Pro	Gly	Phe 250	Ala	Pro	Ser	Asn	Gly 255	Gln
Leu	Asn	Phe	Thr 260	Asp	Gln	Gly	Val	Glu 265	Cys	Arg	Asp	Ile	Asp 270	Glu	Cys
Arg	Gln	Asp 275	Pro	Ser	Thr	Cys	Gly 280	Pro	Asn	Ser	Ile	Cys 285	Thr	Asn	Ala
Leu	Gly 290	Ser	Tyr	Ser	Cys	Gly 295	Cys	Ile	Ala	Gly	Phe 300	His	Pro	Asn	Pro

- 21 -

Glu Gly Ser Gln Lys Asp Gly Asn Phe Ser Cys Gln Arg Val Leu Phe
 305 310 315 320

Lys Cys Lys Glu Asp Val Ile Pro Asp Asn Lys Gln Ile Gln Gln Cys
 325 330 335

Gln Glu Gly Thr Ala Val Lys Pro Ala Tyr Val Ser Phe Cys Ala Gln
 340 345 350

Ile Asn Asn Ile Phe Ser Val Leu Asp Lys Val Cys Glu Asn Lys Thr
 355 360 365

Thr Val Val Ser Leu Lys Asn Thr Thr Glu Ser Phe Val Pro Val Leu
 370 375 380

Lys Gln Ile Ser Thr Trp Thr Lys Phe Thr Lys Glu Glu Thr Ser Ser
 385 390 395 400

Leu Ala Thr Val Phe Leu Glu Ser Val Glu Ser Met Thr Leu Ala Ser
 405 410 415

Phe Trp Lys Pro Ser Ala Asn Ile Thr Pro Ala Val Arg Thr Glu Tyr
 420 425 430

Leu Asp Ile Glu Ser Lys Val Ile Asn Lys Glu Cys Ser Glu Glu Asn
 435 440 445

Val Thr Leu Asp Leu Val Ala Lys Gly Asp Lys Met Lys Ile Gly Cys
 450 455 460

Ser Thr Ile Glu Glu Ser Glu Ser Thr Glu Thr Thr Gly Val Ala Phe
 465 470 475 480

Val Ser Phe Val Gly Met Glu Ser Val Leu Asn Glu Arg Phe Phe Lys
 485 490 495

Asp His Gln Ala Pro Leu Thr Thr Ser Glu Ile Lys Leu Lys Met Asn
 500 505 510

Ser Arg Val Val Gly Gly Ile Met Thr Gly Glu Lys Lys Asp Gly Phe
 515 520 525

Ser Asp Pro Ile Ile Tyr Thr Leu Glu Asn Ile Gln Pro Lys Gln Lys
 530 535 540

Phe Glu Arg Pro Ile Cys Val Ser Trp Ser Thr Asp Val Lys Gly Gly

- 22 -

545		550		555		560
Arg Trp Thr Ser Phe Gly Cys Val Ile Leu Glu Ala Ser Glu Thr Tyr						
		565		570		575
Thr Ile Cys Ser Cys Asn Gln Met Ala Asn Leu Ala Val Ile Met Ala						
		580		585		590
Ser Gly Glu Leu Thr Met Asp Phe Ser Leu Tyr Ile Ile Ser His Val						
		595		600		605
Gly Ile Ile Ile Ser Leu Val Cys Leu Val Leu Ala Ile Ala Thr Phe						
		610		615		620
Leu Leu Cys Arg Ser Ile Arg Asn His Asn Thr Tyr Leu His Leu His						
		625		630		635
						640
Leu Cys Val Cys Leu Leu Leu Ala Lys Thr Leu Phe Leu Ala Gly Ile						
		645		650		655
His Lys Thr Asp Asn Lys Met Gly Cys Ala Ile Ile Ala Gly Phe Leu						
		660		665		670
His Tyr Leu Phe Leu Ala Cys Phe Phe Trp Met Leu Val Glu Ala Val						
		675		680		685
Ile Leu Phe Leu Met Val Arg Asn Leu Lys Val Val Asn Tyr Phe Ser						
		690		695		700
Ser Arg Asn Ile Lys Met Leu His Ile Cys Ala Phe Gly Tyr Gly Leu						
		705		710		715
						720
Pro Met Leu Val Val Val Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr						
		725		730		735
Gly Met His Asn Arg Cys Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp						
		740		745		750
Ser Phe Leu Gly Pro Val Cys Thr Val Ile Val Ile Asn Ser Leu Leu						
		755		760		765
Leu Thr Trp Thr Leu Trp Ile Leu Arg Gln Arg Leu Ser Ser Val Asn						
		770		775		780
Ala Glu Val Ser Thr Leu Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala						
		785		790		795
						800

- 23 -

Phe Ala Gln Leu Phe Ile Leu Gly Cys Ser Trp Val Leu Gly Ile Phe
 805 810 815

Gln Ile Gly Pro Val Ala Gly Val Met Ala Tyr Leu Phe Thr Ile Ile
 820 825 830

Asn Ser Leu Gln Gly Ala Phe Ile Phe Leu Ile His Cys Leu Leu Asn
 835 840 845

Gly Gln Val Arg Glu Glu Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys
 850 855 860

Pro Ser Ser Gln Ser Gln Thr Ser Arg Ile Leu Leu Ser Ser Met Pro
 865 870 875 880

Ser Ala Ser Lys Thr Gly
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 <213> Homo sapiens

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 aaacgctcac tgggcaaaac accttcactg aaaagagacc tcatattatg caaaaaaaat 180
 cttaaaaggc ctctgccttc agaagttaca ag atg atc aat tca acc tcc aca 233
 Met Ile Asn Ser Thr Ser Thr
 1 5
 cag cct cca gat gaa tcc tgc tct cag aac ctc ctg atc act cag cag 281
 Gln Pro Pro Asp Glu Ser Cys Ser Gln Asn Leu Leu Ile Thr Gln Gln
 10 15 20
 atc att cct gtg ctg tac tgt atg gtc ttc att gca gga atc cta ctc 329
 Ile Ile Pro Val Leu Tyr Cys Met Val Phe Ile Ala Gly Ile Leu Leu
 25 30 35
 aat gga gtg tca gga tgg ata ttc ttt tac gtg ccc agc tct gag agt 377
 Asn Gly Val Ser Gly Trp Ile Phe Phe Tyr Val Pro Ser Ser Glu Ser
 40 45 50 55
 ttc atc atc tat ctc aag aac att gtt att gct gac ttt gtg atg agc 425
 Phe Ile Ile Tyr Leu Lys Asn Ile Val Ile Ala Asp Phe Val Met Ser
 60 65 70

- 24 -

ctg act ttt cct ttc aag atc ctt ggt gac tca ggc ctt ggt ccc tgg	473
Leu Thr Phe Pro Phe Lys Ile Leu Gly Asp Ser Gly Leu Gly Pro Trp	
75 80 85	
cag ctg aac gtg ttt gtg tgc agg gtc tct gcc gtg ctc ttc tac gtc	521
Gln Leu Asn Val Phe Val Cys Arg Val Ser Ala Val Leu Phe Tyr Val	
90 95 100	
aac atg tac gtc agc att gtg ttc ttt ggg ctc atc agc ttt gac aga	569
Asn Met Tyr Val Ser Ile Val Phe Phe Gly Leu Ile Ser Phe Asp Arg	
105 110 115	
tat tat aaa att gta aag cct ctt tgg act tct ttc atc cag tca gtg	617
Tyr Tyr Lys Ile Val Lys Pro Leu Trp Thr Ser Phe Ile Gln Ser Val	
120 125 130 135	
agt tac agc aaa ctt ctg tca gtg ata gta tgg atg ctc atg ctc ctc	665
Ser Tyr Ser Lys Leu Leu Ser Val Ile Val Trp Met Leu Met Leu Leu	
140 145 150	
ctt gct gtt cca aat att att ctc acc aac cag agt gtt agg gag gtt	713
Leu Ala Val Pro Asn Ile Ile Leu Thr Asn Gln Ser Val Arg Glu Val	
155 160 165	
aca caa ata aaa tgt ata gaa ctg aaa agt gaa ctg gga cgg aag tgg	761
Thr Gln Ile Lys Cys Ile Glu Leu Lys Ser Glu Leu Gly Arg Lys Trp	
170 175 180	
cac aaa gca tca aac tac atc ttc gtg gcc atc ttc tgg att gtg ttt	809
His Lys Ala Ser Asn Tyr Ile Phe Val Ala Ile Phe Trp Ile Val Phe	
185 190 195	
ctt ttg tta atc gtt ttc tat act gct atc aca aag aaa atc ttt aag	857
Leu Leu Leu Ile Val Phe Tyr Thr Ala Ile Thr Lys Lys Ile Phe Lys	
200 205 210 215	
tcc cac ctt aag tca agt cgg aat tcc act tcg gtc aaa aag aaa tct	905
Ser His Leu Lys Ser Ser Arg Asn Ser Thr Ser Val Lys Lys Lys Ser	
220 225 230	
agc cgc aac ata ttc agc atc gtg ttt gtg ttt ttt gtc tgt ttt gta	953
Ser Arg Asn Ile Phe Ser Ile Val Phe Val Phe Val Cys Phe Val	
235 240 245	
cct tac cat att gcc aga atc ccc tac aca aag agt cag acc gaa gct	1001
Pro Tyr His Ile Ala Arg Ile Pro Tyr Thr Lys Ser Gln Thr Glu Ala	
250 255 260	
cat tac agc tgc cag tca aaa gaa atc ttg cgg tat atg aaa gaa ttc	1049
His Tyr Ser Cys Gln Ser Lys Glu Ile Leu Arg Tyr Met Lys Glu Phe	
265 270 275	
act ctg cta cta tct gct gca aat gta tgc ttg gac cct att att tat	1097
Thr Leu Leu Leu Ser Ala Ala Asn Val Cys Leu Asp Pro Ile Ile Tyr	
280 285 290 295	
ttc ttt cta tgc cag ccg ttt agg gaa atc tta tgt aag aaa ttg cac	1145
Phe Phe Leu Cys Gln Pro Phe Arg Glu Ile Leu Cys Lys Lys Leu His	
300 305 310	
att cca tta aaa gct cag aat gac cta gac att tcc aga atc aaa aga	1193
Ile Pro Leu Lys Ala Gln Asn Asp Leu Asp Ile Ser Arg Ile Lys Arg	

- 25 -

315	320	325	
gga aat aca aca ctt gaa agc aca gat act ttg tga gttcctaccc			1239
Gly Asn Thr Thr Leu Glu Ser Thr Asp Thr Leu			
330	335		
tcttccaaag aaagaccacg tgtgcatggt gtcattcttca attacataac agaaatcaat			1299
aagatatgtg ccctcatcat aaatatcatc tctagcactg ccatccaatt tagttcaata			1359
aaattcaaat ataagtttcc atgctttttt gtaacatcaa agaaaacata cccatcagta			1419
atttctctaa tactgacctt tctatttctt attaataaaa aattaatata tacaattatt			1479
caattctatt atattaanaat aagttaaagt ttataaccac tagtctgggc agttaatgta			1539
gaaatttaaa tagtaaataa aacacaacat aatcaaagac aactcactca ggcattcttct			1599
ttctctaaat accagaatct agtatgtaat tgttttcaac actgtcctta aagactaact			1659
tgaaagcagg cacagtttga tgaagggtga gagagctggt tgcaataaaa agtcagggtt			1719
ttttctgat ttgaagaagc aggaaaagct gacaccacga caatcactta agaaaccct			1779
tattgatgta tttcatggca ctgcaaagga agaggaatat taattgtata cttagcaaga			1839
aaattttttt tttctgatag cactttgagg atattagata catgctaaat atgttttcta			1899
caaagactta cgtcatttaa tgagcctggg gttctgggtg tagaatattt ttaagtaggc			1959
tttactgaga gaaactaaat attggcatac gttatcagca acttcccctg ttcaatagta			2019
tgggaaaaat aagatgactg ggaaaaagac acaccacac cgtagaacat atattaatct			2079
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tctaaaattt acattaatga gtgcaaaata acacataaaa tgaaaattca cacatcacat			2199
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agctaccaaa actaaattct ttctctgcta ttaactggct agaagacatt catctatttt			2319
tcaaagtgtc tttcaaaaca tttttataag taatgtttgt atctatttca tgctttactg			2379
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 <212> PRT
 <213> Homo sapiens

<400> 11

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Asn	Leu	Leu	Ile	Thr	Gln	Gln	Ile	Ile	Pro	Val	Leu	Tyr	Cys	Met	Val
			20				25						30		

- 26 -

Phe Ile Ala Gly Ile Leu Leu Asn Gly Val Ser Gly Trp Ile Phe Phe
 35 40 45

Tyr Val Pro Ser Ser Glu Ser Phe Ile Ile Tyr Leu Lys Asn Ile Val
 50 55 60

Ile Ala Asp Phe Val Met Ser Leu Thr Phe Pro Phe Lys Ile Leu Gly
 65 70 75 80

Asp Ser Gly Leu Gly Pro Trp Gln Leu Asn Val Phe Val Cys Arg Val
 85 90 95

Ser Ala Val Leu Phe Tyr Val Asn Met Tyr Val Ser Ile Val Phe Phe
 100 105 110

Gly Leu Ile Ser Phe Asp Arg Tyr Tyr Lys Ile Val Lys Pro Leu Trp
 115 120 125

Thr Ser Phe Ile Gln Ser Val Ser Tyr Ser Lys Leu Leu Ser Val Ile
 130 135 140

Val Trp Met Leu Met Leu Leu Leu Ala Val Pro Asn Ile Ile Leu Thr
 145 150 155 160

Asn Gln Ser Val Arg Glu Val Thr Gln Ile Lys Cys Ile Glu Leu Lys
 165 170 175

Ser Glu Leu Gly Arg Lys Trp His Lys Ala Ser Asn Tyr Ile Phe Val
 180 185 190

Ala Ile Phe Trp Ile Val Phe Leu Leu Leu Ile Val Phe Tyr Thr Ala
 195 200 205

Ile Thr Lys Lys Ile Phe Lys Ser His Leu Lys Ser Ser Arg Asn Ser
 210 215 220

Thr Ser Val Lys Lys Lys Ser Ser Arg Asn Ile Phe Ser Ile Val Phe
 225 230 235 240

Val Phe Phe Val Cys Phe Val Pro Tyr His Ile Ala Arg Ile Pro Tyr
 245 250 255

Thr Lys Ser Gln Thr Glu Ala His Tyr Ser Cys Gln Ser Lys Glu Ile
 260 265 270

Leu Arg Tyr Met Lys Glu Phe Thr Leu Leu Leu Ser Ala Ala Asn Val
 275 280 285

- 27 -

Cys Leu Asp Pro Ile Ile Tyr Phe Phe Leu Cys Gln Pro Phe Arg Glu
 290 295 300

Ile Leu Cys Lys Lys Leu His Ile Pro Leu Lys Ala Gln Asn Asp Leu
 305 310 315 320

Asp Ile Ser Arg Ile Lys Arg Gly Asn Thr Thr Leu Glu Ser Thr Asp
 325 330 335

Thr Leu

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 tctgcggcgt gactggaggc ccag atg gtc atc atg ggc cag tgc tac tac 111
 Met Val Ile Met Gly Gln Cys Tyr Tyr
 1 5
 aac gag acc atc ggc ttc ttc tat aac aac agt ggc aaa gag ctc agc 159
 Asn Glu Thr Ile Gly Phe Phe Tyr Asn Asn Ser Gly Lys Glu Leu Ser
 10 15 20 25
 tcc cac tgg cgg ccc aag gat gtg gtc gtg gtg gca ctg ggg ctg acc 207
 Ser His Trp Arg Pro Lys Asp Val Val Val Val Ala Leu Gly Leu Thr
 30 35 40
 gtc agc gtg ctg gtg ctg ctg acc aat ctg ctg gtc ata gca gcc atc 255
 Val Ser Val Leu Val Leu Leu Thr Asn Leu Leu Val Ile Ala Ala Ile
 45 50 55
 gcc tcc aac cgc cgc ttc cac cag ccc atc tac tac ctg ctc ggc aat 303
 Ala Ser Asn Arg Arg Phe His Gln Pro Ile Tyr Tyr Leu Leu Gly Asn
 60 65 70
 ctg gcc gcg gct gac ctc ttc gcg ggc gtg gcc tac ctc ttc ctc atg 351
 Leu Ala Ala Ala Asp Leu Phe Ala Gly Val Ala Tyr Leu Phe Leu Met
 75 80 85
 ttc cac act ggt ccc cgc aca gcc cga ctt tca ctt gag ggc tgg ttc 399
 Phe His Thr Gly Pro Arg Thr Ala Arg Leu Ser Leu Glu Gly Trp Phe
 90 95 100 105
 ctg cgg cag ggc ttg ctg gac aca agc ctc act gcg tcg gtg gcc aca 447
 Leu Arg Gln Gly Leu Leu Asp Thr Ser Leu Thr Ala Ser Val Ala Thr
 110 115 120

- 28 -

ctg ctg gcc atc gcc gtg gag cgg cac cgc agt gtg atg gcc gtg cag	495
Leu Leu Ala Ile Ala Val Glu Arg His Arg Ser Val Met Ala Val Gln	
125 130 135	
ctg cac agc cgc ctg ccc cgt ggc cgc gtg gtc atg ctc att gtg ggc	543
Leu His Ser Arg Leu Pro Arg Gly Arg Val Val Met Leu Ile Val Gly	
140 145 150	
gtg tgg gtg gct gcc ctg ggc ctg ggg ctg ctg cct gcc cac tcc tgg	591
Val Trp Val Ala Ala Leu Gly Leu Gly Leu Leu Pro Ala His Ser Trp	
155 160 165	
cac tgc ctc tgt gcc ctg gac cgc tgc tca cgc atg gca ccc ctg ctc	639
His Cys Leu Cys Ala Leu Asp Arg Cys Ser Arg Met Ala Pro Leu Leu	
170 175 180 185	
agc cgc tcc tat ttg gcc gtc tgg gct ctg tcg agc ctg ctt gtc ttc	687
Ser Arg Ser Tyr Leu Ala Val Trp Ala Leu Ser Ser Leu Leu Val Phe	
190 195 200	
ctg ctc atg gtg gct gtg tac acc cgc att ttc ttc tac gtg cgg cgg	735
Leu Leu Met Val Ala Val Tyr Thr Arg Ile Phe Phe Tyr Val Arg Arg	
205 210 215	
cga gtg cag cgc atg gca gag cat gtc agc tgc cac ccc cgc tac cga	783
Arg Val Gln Arg Met Ala Glu His Val Ser Cys His Pro Arg Tyr Arg	
220 225 230	
gag acc acg ctc agc ctg gtc aag act gtt gtc atc atc ctg ggg gcg	831
Glu Thr Thr Leu Ser Leu Val Lys Thr Val Val Ile Ile Leu Gly Ala	
235 240 245	
ttc gtg gtc tgc tgg aca cca ggc cag gtg gta ctg ctc ctg gat ggt	879
Phe Val Val Cys Trp Thr Pro Gly Gln Val Val Leu Leu Leu Asp Gly	
250 255 260 265	
tta ggc tgt gag tcc tgc aat gtc ctg gct gta gaa aag tac ttc cta	927
Leu Gly Cys Glu Ser Cys Asn Val Leu Ala Val Glu Lys Tyr Phe Leu	
270 275 280	
ctg ttg gcc gag gcc aac tca ctg gtc aat gct gct gtg tac tct tgc	975
Leu Leu Ala Glu Ala Asn Ser Leu Val Asn Ala Ala Val Tyr Ser Cys	
285 290 295	
cga gat gct gag atg cgc cgc acc ttc cgc cgc ctt ctc tgc tgc gcg	1023
Arg Asp Ala Glu Met Arg Arg Thr Phe Arg Arg Leu Leu Cys Cys Ala	
300 305 310	
tgc ctc cgc cag tcc acc cgc gag tct gtc cac tat aca tcc tct gcc	1071
Cys Leu Arg Gln Ser Thr Arg Glu Ser Val His Tyr Thr Ser Ser Ala	
315 320 325	
cag gga ggt gcc agc act cgc atc atg ctt ccc gag aac ggc cac cca	1119
Gln Gly Gly Ala Ser Thr Arg Ile Met Leu Pro Glu Asn Gly His Pro	
330 335 340 345	
ctg atg act cca ccc ttt agc tac ctt gaa ctt cag cgg tac gcg gca	1167
Leu Met Thr Pro Pro Phe Ser Tyr Leu Glu Leu Gln Arg Tyr Ala Ala	
350 355 360	
agc aac aaa tcc aca gcc cct gat gac ttg tgg gtg ctc ctg gct caa	1215

- 29 -

Ser Asn Lys Ser Thr Ala Pro Asp Asp Leu Trp Val Leu Leu Ala Gln
 365 370 375

ccc aac caa cag gac tga ctgactggca ggacaagggtc tggcatggca 1263
 Pro Asn Gln Gln Asp
 380

cagcaccact gccaggcctc cccaggcaca ccactctgcc caggggaatgg gggctttggg 1323
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 caggtttagg gggtttgtaa cagacattat tctgttttca ctgcgtatcc ttggtaagcc 1443
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 ctctcggggc atgctacccg gtatgactgg gtaatgagga cagactgtgg acaccccatc 1563
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 gtttgtggct ccttgcagcc tccagggtact ggctgtccc caatagaatt gaagcagtcc 1683
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<400> 13

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Tyr Asn Asn Ser Gly Lys Glu Leu Ser Ser His Trp Arg Pro Lys Asp
 20 25 30

Val Val Val Val Ala Leu Gly Leu Thr Val Ser Val Leu Val Leu Leu
 35 40 45

Thr Asn Leu Leu Val Ile Ala Ala Ile Ala Ser Asn Arg Arg Phe His
 50 55 60

Gln Pro Ile Tyr Tyr Leu Leu Gly Asn Leu Ala Ala Ala Asp Leu Phe
 65 70 75 80

Ala Gly Val Ala Tyr Leu Phe Leu Met Phe His Thr Gly Pro Arg Thr
 85 90 95

Ala Arg Leu Ser Leu Glu Gly Trp Phe Leu Arg Gln Gly Leu Leu Asp
 100 105 110

Thr Ser Leu Thr Ala Ser Val Ala Thr Leu Leu Ala Ile Ala Val Glu
 115 120 125

- 30 -

Arg His Arg Ser Val Met Ala Val Gln Leu His Ser Arg Leu Pro Arg
 130 135 140

Gly Arg Val Val Met Leu Ile Val Gly Val Trp Val Ala Ala Leu Gly
 145 150 155 160

Leu Gly Leu Leu Pro Ala His Ser Trp His Cys Leu Cys Ala Leu Asp
 165 170 175

Arg Cys Ser Arg Met Ala Pro Leu Leu Ser Arg Ser Tyr Leu Ala Val
 180 185 190

Trp Ala Leu Ser Ser Leu Leu Val Phe Leu Leu Met Val Ala Val Tyr
 195 200 205

Thr Arg Ile Phe Phe Tyr Val Arg Arg Arg Val Gln Arg Met Ala Glu
 210 215 220

His Val Ser Cys His Pro Arg Tyr Arg Glu Thr Thr Leu Ser Leu Val
 225 230 235 240

Lys Thr Val Val Ile Ile Leu Gly Ala Phe Val Val Cys Trp Thr Pro
 245 250 255

Gly Gln Val Val Leu Leu Leu Asp Gly Leu Gly Cys Glu Ser Cys Asn
 260 265 270

Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser
 275 280 285

Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg
 290 295 300

Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg
 305 310 315 320

Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly Ala Ser Thr Arg
 325 330 335

Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Thr Pro Pro Phe Ser
 340 345 350

Tyr Leu Glu Leu Gln Arg Tyr Ala Ala Ser Asn Lys Ser Thr Ala Pro
 355 360 365

Asp Asp Leu Trp Val Leu Leu Ala Gln Pro Asn Gln Gln Asp

- 31 -

370 375 380

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 <211> 993
 <212> DNA
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<220>
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 <222> (1) .. (993)

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1 5 10 15	
atc ttc ctc act ggc ctc cct gcc aac ctc ctg gcc ctg cgg gcc ttt	96
Ile Phe Leu Thr Gly Leu Pro Ala Asn Leu Leu Ala Leu Arg Ala Phe	
20 25 30	
gtg ggg cgg atc cgc cag ccc cag cct gca cct gtg cac atc ctc ctg	144
Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu	
35 40 45	
ctg agc ctg acg ctg gcc gac ctc ctc ctg ctg ctg ctg ctg ccc ttc	192
Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Pro Phe	
50 55 60	
aag atc atc gag gct gcg tcg aac ttc cgc tgg tac ctg ccc aag gtc	240
Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val	
65 70 75 80	
gtc tgc gcc ctc acg agt ttt ggc ttc tac agc agc atc tac tgc agc	288
Val Cys Ala Leu Thr Ser Phe Gly Phe Tyr Ser Ser Ile Tyr Cys Ser	
85 90 95	
acg tgg ctc ctg gcg ggc atc agc atc gag cgc tac ctg gga gtg gct	336
Thr Trp Leu Leu Ala Gly Ile Ser Ile Glu Arg Tyr Leu Gly Val Ala	
100 105 110	
ttc ccc gtg cag tac aag ctc tcc cgc cgg cct ctg tat gga gtg att	384
Phe Pro Val Gln Tyr Lys Leu Ser Arg Arg Pro Leu Tyr Gly Val Ile	
115 120 125	
gca gct ctg gtg gcc tgg gtt atg tcc ttt ggt cac tgc acc atc gtg	432
Ala Ala Leu Val Ala Trp Val Met Ser Phe Gly His Cys Thr Ile Val	
130 135 140	
atc atc gtt caa tac ttg aac acg act gag cag gtc aga agt ggc aat	480
Ile Ile Val Gln Tyr Leu Asn Thr Thr Glu Gln Val Arg Ser Gly Asn	
145 150 155 160	
gaa att acc tgc tac gag aac ttc acc gat aac cag ttg gac gtg gtg	528
Glu Ile Thr Cys Tyr Glu Asn Phe Thr Asp Asn Gln Leu Asp Val Val	
165 170 175	
ctg ccc gtg cgg ctg gag ctg tgc ctg gtg ctc ttc ttc atc ccc atg	576
Leu Pro Val Arg Leu Glu Leu Cys Leu Val Leu Phe Phe Ile Pro Met	
180 185 190	

- 32 -

gca gtc acc atc ttc tgc tac tgg cgt ttt gtg tgg atc atg ctc tcc 624
Ala Val Thr Ile Phe Cys Tyr Trp Arg Phe Val Trp Ile Met Leu Ser
195 200 205

cag ccc ctt gtg ggg gcc cag agg cgg cgc cga gcc gtg ggg ctg gct 672
Gln Pro Leu Val Gly Ala Gln Arg Arg Arg Arg Ala Val Gly Leu Ala
210 215 220

gtg gtg acg ctg ctc aat ttc ctg gtg tgc ttc gga cct tac aac gtg 720
Val Val Thr Leu Leu Asn Phe Leu Val Cys Phe Gly Pro Tyr Asn Val
225 230 235 240

tcc cac ctg gtg ggg tat cac cag aga aaa agc ccc tgg tgg cgg tca 768
Ser His Leu Val Gly Tyr His Gln Arg Lys Ser Pro Trp Trp Arg Ser
245 250 255

ata gcc gtg gtg ttc agt tca ctc aac gcc agt ctg gac ccc ctg ctc 816
Ile Ala Val Val Phe Ser Ser Leu Asn Ala Ser Leu Asp Pro Leu Leu
260 265 270

ttc tat ttc tct tct tca gtg gtg cgc agg gca ttt ggg aga ggg ctg 864
Phe Tyr Phe Ser Ser Ser Val Val Arg Arg Ala Phe Gly Arg Gly Leu
275 280 285

cag gtg ctg cgg aat cag ggc tcc tcc ctg ttg gga cgc aga ggc aaa 912
Gln Val Leu Arg Asn Gln Gly Ser Ser Leu Leu Gly Arg Arg Gly Lys
290 295 300

gac aca gca gag ggg aca aat gag gac agg ggt gtg ggt caa gga gaa 960
Asp Thr Ala Glu Gly Thr Asn Glu Asp Arg Gly Val Gly Gln Gly Glu
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Gly Met Pro Ser Ser Asp Phe Thr Thr Glu
325 330

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Ile Phe Leu Thr Gly Leu Pro Ala Asn Leu Leu Ala Leu Arg Ala Phe
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Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu
35 40 45

Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Leu Pro Phe
50 55 60

Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val
65 70 75 80

- 34 -

Gly Met Pro Ser Ser Asp Phe Thr Thr Glu
325 330

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Tyr	Gly	Gly	Ser	Ser	Ser	Thr	Glu	Asn	Ala	Val	Thr	Ala	Ile	Arg	Phe	
190					195					200					205	
ctt	ttt	ggc	ttc	ctg	ggg	ccc	ctg	gtg	gcc	gtg	gcc	agc	tgc	cac	agt	734
Leu	Phe	Gly	Phe	Leu	Gly	Pro	Leu	Val	Ala	Val	Ala	Ser	Cys	His	Ser	
				210					215					220		
gcc	ctc	ctg	tgc	tgg	gca	gcc	cga	cgc	tgc	cgg	ccg	ctg	ggc	aca	gcc	782
Ala	Leu	Leu	Cys	Trp	Ala	Ala	Arg	Arg	Cys	Arg	Pro	Leu	Gly	Thr	Ala	
			225				230						235			
att	gtg	gtg	ggg	ttt	ttt	gtc	tgc	tgg	gca	ccc	tac	cac	ctg	ctg	ggg	830
Ile	Val	Val	Gly	Phe	Phe	Val	Cys	Trp	Ala	Pro	Tyr	His	Leu	Leu	Gly	
		240					245					250				
ctg	gtg	ctc	act	gtg	gcg	gcc	ccg	aac	tcc	gca	ctc	ctg	gcc	agg	gcc	878
Leu	Val	Leu	Thr	Val	Ala	Ala	Pro	Asn	Ser	Ala	Leu	Leu	Ala	Arg	Ala	
	255					260					265					
ctg	cgg	gct	gaa	ccc	ctc	atc	gtg	ggc	ctt	gcc	ctc	gct	cac	agc	tgc	926
Leu	Arg	Ala	Glu	Pro	Leu	Ile	Val	Gly	Leu	Ala	Leu	Ala	His	Ser	Cys	
270					275				280						285	
ctc	aat	ccc	atg	ctc	ttc	ctg	tat	ttt	ggg	agg	gct	caa	ctc	cgc	cgg	974
Leu	Asn	Pro	Met	Leu	Phe	Leu	Tyr	Phe	Gly	Arg	Ala	Gln	Leu	Arg	Arg	
			290						295					300		
tca	ctg	cca	gct	gcc	tgt	cac	tgg	gcc	ctg	agg	gag	tcc	cag	ggc	cag	1022
Ser	Leu	Pro	Ala	Ala	Cys	His	Trp	Ala	Leu	Arg	Glu	Ser	Gln	Gly	Gln	
			305					310					315			
gac	gaa	agt	gtg	gac	agc	aag	aaa	tcc	acc	agc	cat	gac	ctg	gtc	tcg	1070
Asp	Glu	Ser	Val	Asp	Ser	Lys	Lys	Ser	Thr	Ser	His	Asp	Leu	Val	Ser	
		320				325					330					
gag	atg	gag	gtg	tag	gctggagaga	cattgtgggt	gtgtatcttc	ttatctcatt								1125
Glu	Met	Glu	Val													
			335													
tcacaagact	ggcttcaggc	atagctggat	ccaggagctc	aatgatgtct	tcattttatt											1185
ccttccttca	ttcaacagat	atccatcatg	cacttgctat	gtgcaaggcc	tttttaggca											1245
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 <212> PRT
 <213> Homo sapiens

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Ser Asp Arg Pro Val Asp Cys Leu Asp Gly Ala Cys Leu Ala Ile Asp

- 36 -

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Pro	Leu	Arg	Val	Ala	Pro	Leu	Pro	Leu	Tyr	Ala	Ala	Ile	Phe	Leu	Val
		35					40					45			
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Arg	Arg	Arg	Val	Gly	Ala	Thr	Trp	Leu	Leu	His	Leu	Ala	Val	Ala	Asp
65						70					75				80
Leu	Leu	Cys	Cys	Leu	Ser	Leu	Pro	Ile	Leu	Ala	Val	Pro	Ile	Ala	Arg
				85					90					95	
Gly	Gly	His	Trp	Pro	Tyr	Gly	Ala	Val	Gly	Cys	Arg	Ala	Leu	Pro	Ser
			100					105					110		
Ile	Ile	Leu	Leu	Thr	Met	Tyr	Ala	Ser	Val	Leu	Leu	Leu	Ala	Ala	Leu
		115					120					125			
Ser	Ala	Asp	Leu	Cys	Phe	Leu	Ala	Leu	Gly	Pro	Ala	Trp	Trp	Ser	Thr
	130					135					140				
Val	Gln	Arg	Ala	Cys	Gly	Val	Gln	Val	Ala	Cys	Gly	Ala	Ala	Trp	Thr
145						150					155				160
Leu	Ala	Leu	Leu	Leu	Thr	Val	Pro	Ser	Ala	Ile	Tyr	Arg	Arg	Leu	His
				165					170					175	
Gln	Glu	His	Phe	Pro	Ala	Arg	Leu	Gln	Cys	Val	Val	Asp	Tyr	Gly	Gly
			180					185					190		
Ser	Ser	Ser	Thr	Glu	Asn	Ala	Val	Thr	Ala	Ile	Arg	Phe	Leu	Phe	Gly
		195					200					205			
Phe	Leu	Gly	Pro	Leu	Val	Ala	Val	Ala	Ser	Cys	His	Ser	Ala	Leu	Leu
	210					215					220				
Cys	Trp	Ala	Ala	Arg	Arg	Cys	Arg	Pro	Leu	Gly	Thr	Ala	Ile	Val	Val
225						230					235				240
Gly	Phe	Phe	Val	Cys	Trp	Ala	Pro	Tyr	His	Leu	Leu	Gly	Leu	Val	Leu
				245					250					255	
Thr	Val	Ala	Ala	Pro	Asn	Ser	Ala	Leu	Leu	Ala	Arg	Ala	Leu	Arg	Ala
			260					265					270		

- 37 -

Glu Pro Leu Ile Val Gly Leu Ala Leu Ala His Ser Cys Leu Asn Pro
 275 280 285

Met Leu Phe Leu Tyr Phe Gly Arg Ala Gln Leu Arg Arg Ser Leu Pro
 290 295 300

Ala Ala Cys His Trp Ala Leu Arg Glu Ser Gln Gly Gln Asp Glu Ser
 305 310 315 320

Val Asp Ser Lys Lys Ser Thr Ser His Asp Leu Val Ser Glu Met Glu
 325 330 335

Val

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 <212> DNA
 <213> Homo sapiens

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 <222> (174) .. (1175)

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 tgttttcttt tgtttgtata tatgtttatt ggtaacaggt gacactggaa gca atg 176
 Met
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aac acc aca gtg atg caa ggc ttc aac aga tct gag cgg tgc ccc aga 224
 Asn Thr Thr Val Met Gln Gly Phe Asn Arg Ser Glu Arg Cys Pro Arg
 5 10 15

gac act cgg ata gta cag ctg gta ttc cca gcc ctc tac aca gtg gtt 272
 Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val Val
 20 25 30

ttc ttg acc ggc atc ctg ctg aat act ttg gct ctg tgg gtg ttt gtt 320
 Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe Val
 35 40 45

cac atc ccc agc tcc tcc acc ttc atc atc tac ctc aaa aac act ttg 368
 His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr Leu
 50 55 60 65

gtg gcc gac ttg ata atg aca ctc atg ctt cct ttc aaa atc ctc tct 416
 Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu Ser
 70 75 80

gac tca cac ctg gca ccc tgg cag ctc aga gct ttt gtg tgt cgt ttt 464
 Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg Phe

- 38 -

85	90	95	
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ggg ctc ata gcc ttt gac aga ttc ctc aag atc atc aga cct ttg aga Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu Arg 115 120 125			560
aat att ttt cta aaa aaa cct gtt ttt gca aaa acg gtc tca atc ttc Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile Phe 130 135 140 145			608
atc tgg ttc ttt ttg ttc ttc atc tcc ctg cca aat acg atc ttg agc Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Thr Ile Leu Ser 150 155 160			656
aac aag gaa gca aca cca tct tct gtg aaa aag tgt gct tcc tta aag Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu Lys 165 170 175			704
ggg cct ctg ggg ctg aaa tgg cat caa atg gta aat aac ata tgc cag Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys Gln 180 185 190			752
ttt att ttc tgg act gtt ttt atc cta atg ctt gtg ttt tat gtg gtt Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val Val 195 200 205			800
att gca aaa aaa gta tat gat tct tat aga aag tcc aaa agt aag gac Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys Asp 210 215 220 225			848
aga aaa aac aac aaa aag ctg gaa ggc aaa gta ttt gtt gtc gtg gct Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Val Ala 230 235 240			896
gtc ttc ttt gtg tgt ttt gct cca ttt cat ttt gcc aga gtt cca tat Val Phe Phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro Tyr 245 250 255			944
act cac agt caa acc aac aat aag act gac tgt aga ctg caa aat caa Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn Gln 260 265 270			992
ctg ttt att gct aaa gaa aca act ctc ttt ttg gca gca act aac att Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn Ile 275 280 285			1040
tgt atg gat ccc tta ata tac ata ttc tta tgt aaa aaa ttc aca gaa Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr Glu 290 295 300 305			1088
aag cta cca tgt atg caa ggg aga aag acc aca gca tca agc caa gaa Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln Glu 310 315 320			1136
aat cat agc agt cag aca gac aac ata acc tta ggc tga caactgtaca Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly 325 330			1185

- 39 -

taggggtaac ttctatztat tgatgagact tccgtagata atgtggaaat caaatTTaAC	1245
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gattatataa aatttaaATC cacatagatc tattcataag ctgaatgaac cactactaag	1365
agaatgcaac aggatacaaa tggccactag aggtcattat ttctttcttt cttttttttt	1425
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 <212> PRT
 <213> Homo sapiens

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Val Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe
 35 40 45

Val His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr
 50 55 60

Leu Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu
 65 70 75 80

Ser Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg
 85 90 95

Phe Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu
 100 105 110

Leu Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu
 115 120 125

Arg Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile
 130 135 140

Phe Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Thr Ile Leu
 145 150 155 160

Ser Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu
 165 170 175

Lys Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys
 180 185 190

Gln Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val
 195 200 205

Val Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys
 210 215 220

Asp Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Val
 225 230 235 240

Ala Val phe phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro
245 250 255

Tyr Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn
260 265 270

Gln Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn
275 280 285

Ile Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr
290 295 300

Glu Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln
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Glu Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly
325 330

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ctttataatt	tgggtattaga	taacaaggtg	aacaaaactg	acaataaata	ctccaacgaa		240
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gtgcaggggt	gcaaccgggt	caggaaacct	cgcctcggag	taaaagggaa	accaaatacgg		780
ggcccaggcc	ctgagaatgg	gttcaaacgg	gccaccacc	ggtaacggta	tcagaaaaaa		840
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<210> 21

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 <212> DNA
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 Met Ala Ser His Glu Val
 1 5
 gat aat gca gag ctg ggg tca gcc tct gcc cat ggt acc cca ggc agt 164
 Asp Asn Ala Glu Leu Gly Ser Ala Ser Ala His Gly Thr Pro Gly Ser
 10 15 20
 gag acg gga cca gaa gag ctg aat act tct gtc tac cac ccc ata aat 212
 Glu Thr Gly Pro Glu Glu Leu Asn Thr Ser Val Tyr His Pro Ile Asn
 25 30 35
 gga tca cca gat tat cag aaa gca aaa tta caa gtt ctt ggg gcc atc 260
 Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu Gln Val Leu Gly Ala Ile
 40 45 50
 cag atc ctg aat gca gca atg att ctg gct ttg ggt gtc ttt ctg ggt 308
 Gln Ile Leu Asn Ala Ala Met Ile Leu Ala Leu Gly Val Phe Leu Gly
 55 60 65 70
 tcc ttg caa tac cca tac cac ttc caa aag cac ttc ttt ttc ttc acc 356
 Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys His Phe Phe Phe Phe Thr
 75 80 85
 ttc tac aca ggc tac ccg att tgg ggt gct gtg ttt ttc tgt agt tca 404
 Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala Val Phe Phe Cys Ser Ser
 90 95 100
 gga acc ttg tct gtt gta gca ggg ata aaa ccc aca aga aca tgg ata 452
 Gly Thr Leu Ser Val Val Ala Gly Ile Lys Pro Thr Arg Thr Trp Ile
 105 110 115
 cag aac agt ttt gga atg aac att gcc agt gct aca att gca cta gtg 500
 Gln Asn Ser Phe Gly Met Asn Ile Ala Ser Ala Thr Ile Ala Leu Val
 120 125 130
 ggg act gct ttt ctc tca cta aat ata gca gtt aat atc cag tca tta 548
 Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala Val Asn Ile Gln Ser Leu
 135 140 145 150
 agg agt tgt cac tct tca tca gag tca ccg gac cta tgc aat tac atg 596
 Arg Ser Cys His Ser Ser Ser Glu Ser Pro Asp Leu Cys Asn Tyr Met
 155 160 165
 ggc tcc ata tca aat ggc atg gtg tct cta ctg ctg att ctc acc ttg 644
 Gly Ser Ile Ser Asn Gly Met Val Ser Leu Leu Leu Ile Leu Thr Leu
 170 175 180
 ctg gaa tta tgc gta act atc tct acc ata gcc atg tgg tgc aat gca 692
 Leu Glu Leu Cys Val Thr Ile Ser Thr Ile Ala Met Trp Cys Asn Ala

- 43 -

185	190	195	
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Asn Cys Cys Asn Ser Arg Glu Glu Ile Ser Ser Pro Pro Asn Ser Val			
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aaagctcaat ctttctatca tggcaccaat cacaagaacc ttggacgttt gactgactct			913
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acacatgccc tgatatgtaa atgatgattt atgttggcga gtctgagagc aagcccaa			1393
gtgttcttca aaggacaatg ggaaactgta aagtagagaa ctaaagaata aggccttttag			1453
aatctgacac atctgggttc aaattctgaa actgtcactt attacctgta tgaacatggg			1513
caaattatct aatctctctg atctatTTTT cctcatctgt aaaatagggtg taataataac			1573
aactactttg tcggttgctc tgagggttaa atgaaaataa aaagaaaatg tgaaacagca			1633
ccacaggtac ttg			1646

<210> 22
 <211> 214
 <212> PRT
 <213> Homo sapiens

<400> 22

Met	Ala	Ser	His	Glu	Val	Asp	Asn	Ala	Glu	Leu	Gly	Ser	Ala	Ser	Ala
1				5					10					15	

His	Gly	Thr	Pro	Gly	Ser	Glu	Thr	Gly	Pro	Glu	Glu	Leu	Asn	Thr	Ser
			20					25					30		

Val	Tyr	His	Pro	Ile	Asn	Gly	Ser	Pro	Asp	Tyr	Gln	Lys	Ala	Lys	Leu
		35					40					45			

Gln	Val	Leu	Gly	Ala	Ile	Gln	Ile	Leu	Asn	Ala	Ala	Met	Ile	Leu	Ala
	50					55					60				

- 44 -

Leu Gly Val Phe Leu Gly Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys
65 70 75 80

His Phe Phe Phe Phe Thr Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala
85 90 95

Val Phe Phe Cys Ser Ser Gly Thr Leu Ser Val Val Ala Gly Ile Lys
100 105 110

Pro Thr Arg Thr Trp Ile Gln Asn Ser Phe Gly Met Asn Ile Ala Ser
115 120 125

Ala Thr Ile Ala Leu Val Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala
130 135 140

Val Asn Ile Gln Ser Leu Arg Ser Cys His Ser Ser Ser Glu Ser Pro
145 150 155 160

Asp Leu Cys Asn Tyr Met Gly Ser Ile Ser Asn Gly Met Val Ser Leu
165 170 175

Leu Leu Ile Leu Thr Leu Leu Glu Leu Cys Val Thr Ile Ser Thr Ile
180 185 190

Ala Met Trp Cys Asn Ala Asn Cys Cys Asn Ser Arg Glu Glu Ile Ser
195 200 205

Ser Pro Pro Asn Ser Val
210

<210> 23
<211> 2481
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (179) .. (1276)

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ggttgcaagg cagttctgct ccccatcgct ctcttgctga ctggggactg ctgagcccgt 120
gcacggcaga gagtctgggtg ggggtggaggg gctggcctgg cccctctgct ctgtggaa 178
atg ctg ggg caa gtg gtc acc ctc ata ctc ctc ctg ctc ctc aag gtg 226
Met Leu Gly Gln Val Val Thr Leu Ile Leu Leu Leu Leu Lys Val
1 5 10 15
tat cag ggc aaa gga tgc cag gga tca gct gac cat gtg gtt agc atc 274

- 45 -

Tyr	Gln	Gly	Lys	Gly	Cys	Gln	Gly	Ser	Ala	Asp	His	Val	Val	Ser	Ile	
			20					25					30			
tcg	gga	gtg	cct	ctt	cag	tta	caa	cca	aac	agc	ata	cag	acg	aag	gtt	322
Ser	Gly	Val	Pro	Leu	Gln	Leu	Gln	Pro	Asn	Ser	Ile	Gln	Thr	Lys	Val	
		35					40					45				
gac	agc	att	gca	tgg	aag	aag	ttg	ctg	ccc	tca	caa	aat	gga	ttt	cat	370
Asp	Ser	Ile	Ala	Trp	Lys	Lys	Leu	Leu	Pro	Ser	Gln	Asn	Gly	Phe	His	
	50					55					60					
cac	ata	ttg	aag	tgg	gag	aat	ggc	tct	ttg	cct	tcc	aat	act	tcc	aat	418
His	Ile	Leu	Lys	Trp	Glu	Asn	Gly	Ser	Leu	Pro	Ser	Asn	Thr	Ser	Asn	
	65				70					75					80	
gat	aga	ttc	agt	ttt	ata	gtc	aag	aac	ttg	agt	ctt	ctc	atc	aag	gca	466
Asp	Arg	Phe	Ser	Phe	Ile	Val	Lys	Asn	Leu	Ser	Leu	Leu	Ile	Lys	Ala	
				85					90					95		
gct	cag	cag	cag	gac	agt	ggc	ctc	tac	tgc	ctg	gag	gtc	acc	agt	ata	514
Ala	Gln	Gln	Gln	Asp	Ser	Gly	Leu	Tyr	Cys	Leu	Glu	Val	Thr	Ser	Ile	
			100					105					110			
tct	gga	aaa	gtt	cag	aca	gcc	acg	ttc	cag	gtt	ttt	gta	ttt	gat	aaa	562
Ser	Gly	Lys	Val	Gln	Thr	Ala	Thr	Phe	Gln	Val	Phe	Val	Phe	Asp	Lys	
		115					120					125				
gtt	gag	aaa	ccc	cgc	cta	cag	ggg	cag	ggg	aag	atc	ctg	gac	aga	ggg	610
Val	Glu	Lys	Pro	Arg	Leu	Gln	Gly	Gln	Gly	Lys	Ile	Leu	Asp	Arg	Gly	
		130				135					140					
aga	tgc	caa	gtg	gct	ctg	tct	tgc	ttg	gtc	tcc	agg	gat	ggc	aat	gtg	658
Arg	Cys	Gln	Val	Ala	Leu	Ser	Cys	Leu	Val	Ser	Arg	Asp	Gly	Asn	Val	
					150					155					160	
tcc	tat	gct	tgg	tac	aga	ggg	agc	aag	ctg	atc	cag	aca	gca	ggg	aac	706
Ser	Tyr	Ala	Trp	Tyr	Arg	Gly	Ser	Lys	Leu	Ile	Gln	Thr	Ala	Gly	Asn	
				165					170					175		
ctc	acc	tac	ctg	gac	gag	gag	gtt	gac	att	aat	ggc	act	cac	aca	tat	754
Leu	Thr	Tyr	Leu	Asp	Glu	Glu	Val	Asp	Ile	Asn	Gly	Thr	His	Thr	Tyr	
			180					185					190			
acc	tgc	aat	gtc	agc	aat	cct	gtt	agc	tgg	gaa	agc	cac	acc	ctg	aat	802
Thr	Cys	Asn	Val	Ser	Asn	Pro	Val	Ser	Trp	Glu	Ser	His	Thr	Leu	Asn	
		195					200					205				
ctc	act	cag	gac	tgt	cag	aat	gcc	cat	cag	gaa	ttc	aga	ttt	tgg	ccg	850
Leu	Thr	Gln	Asp	Cys	Gln	Asn	Ala	His	Gln	Glu	Phe	Arg	Phe	Trp	Pro	
		210				215					220					
ttt	ttg	gtg	atc	atc	gtg	att	cta	agc	gca	ctg	ttc	ctt	ggc	acc	ctt	898
Phe	Leu	Val	Ile	Ile	Val	Ile	Leu	Ser	Ala	Leu	Phe	Leu	Gly	Thr	Leu	
					230					235					240	
gcc	tgc	ttc	tgt	gtg	tgg	agg	aga	aag	agg	aag	gag	aag	cag	tca	gag	946
Ala	Cys	Phe	Cys	Val	Trp	Arg	Arg	Lys	Arg	Lys	Glu	Lys	Gln	Ser	Glu	
				245					250					255		
acc	agt	ccc	aag	gaa	ttt	ttg	aca	att	tac	gaa	gat	gtc	aag	gat	ctg	994
Thr	Ser	Pro	Lys	Glu	Phe	Leu	Thr	Ile	Tyr	Glu	Asp	Val	Lys	Asp	Leu	
			260					265					270			

- 46 -

aaa acc agg aga aat cac gag cag gag cag act ttt cct gga ggg ggg	1042
Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly Gly	
275 280 285	
agc acc atc tac tct atg atc cag tcc cag tct tct gct ccc acg tca	1090
Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser	
290 295 300	
caa gaa cct gca tat aca tta tat tca tta att cag cct tcc agg aag	1138
Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys	
305 310 315 320	
tct gga tcc agg aag agg aac cac agc cct tcc ttc aat agc act atc	1186
Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile	
325 330 335	
tat gaa gtg att gga aag agt caa cct aaa gcc cag aac cct gct cga	1234
Tyr Glu Val Ile Gly Lys Ser Gln Pro Lys Ala Gln Asn Pro Ala Arg	
340 345 350	
ttg agc cgc aaa gag ctg gag aac ttt gat gtt tat tcc tag	1276
Leu Ser Arg Lys Glu Leu Glu Asn Phe Asp Val Tyr Ser	
355 360 365	
ttgctgcagc aattctcacc tttcttgac atcagcatct gctttgggaa ttggcacagt	1336
ggatgacggc acaggagtct ctatagaaca gttcctagtc tggagaggat atggaaattt	1396
gttcttggtc tatattttgt tttgaaaatg atgtctaaca accatgataa gagcaaggct	1456
gttaaataat atcttccaat ttacagatca gacatgaatg ggtggagggg ttaggttggt	1516
cacaaaaggc cacattccaa gtatttgtaa tctagaaagt gttatgtaag tgatgttatt	1576
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ctggggtgac tgcattttcta gactctcgcc ggcccaggcc catcttccaa agcaagagga	1696
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tccggctgtg aactggctgg caggttctgc acgtgggtgg gggccagggc ctgggcttta	1816
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ccaccagggg gagtgggctg aaggagagat agatggtgca aagcaagccc atctctaagt	1936
agaaaaatca cccagagcac atgctgacct gataactggg gtgttgagac cagctttgtc	1996
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gaagtggctt cccagaggaa gaggcctctc agaaacctg ttctatttaa gttctgagtc	2116
ctgatgagtg ttccccagga tgcacattga agggagggct caggcagctg agggctgaga	2176
atgaggcagt tggaatctag acactatgct gggttccctg agtcgtcagg ccagacattt	2236
caacaaggct gtggggagca gggctgtgac tctggctgag cccaggaaag cgacaagggt	2296
gaactgggag aggacttact cagagacccc aacaggtgat actgcacaaa gcctgggttct	2356
tcaattttcc taccctgtat ctaacatagg agtttcatat aaaacgggtga tatcatgcag	2416

- 47 -

atgcagctctg aattccttgc ctgaattaaa tttatgtatc ctctccaaaa aaaaaaaaaa 2476

aaaaa 2481

<210> 24
 <211> 365
 <212> PRT
 <213> Homo sapiens

<400> 24

Met Leu Gly Gln Val Val Thr Leu Ile Leu Leu Leu Leu Lys Val
 1 5 10 15

Tyr Gln Gly Lys Gly Cys Gln Gly Ser Ala Asp His Val Val Ser Ile
 20 25 30

Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val
 35 40 45

Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
 50 55 60

His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
 65 70 75 80

Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
 85 90 95

Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
 100 105 110

Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
 115 120 125

Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly
 130 135 140

Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
 145 150 155 160

Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
 165 170 175

Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
 180 185 190

Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn

- 48 -

195	200	205
Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro 210	215	220
Phe Leu Val Ile Ile Val Ile Leu Ser Ala Leu Phe Leu Gly Thr Leu 225	230	235 240
Ala Cys Phe Cys Val Trp Arg Arg Lys Arg Lys Glu Lys Gln Ser Glu 245	250	255
Thr Ser Pro Lys Glu Phe Leu Thr Ile Tyr Glu Asp Val Lys Asp Leu 260	265	270
Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly Gly 275	280	285
Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser 290	295	300
Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys 305	310	315 320
Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile 325	330	335
Tyr Glu Val Ile Gly Lys Ser Gln Pro Lys Ala Gln Asn Pro Ala Arg 340	345	350
Leu Ser Arg Lys Glu Leu Glu Asn Phe Asp Val Tyr Ser 355	360	365

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 <212> DNA
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<220>
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 <222> (593) .. (3061)

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 gggggccccc aggccgcagc ttgcctgcgc gctctgagcc ttcgcaactc gcgagcaaag 180
 tttggtggag gcaacgcca gcctgagtcc tttcttctc tcgttcccca aatccgaggc 240

- 49 -

agcccgcggg	cgatcatgccc	gcgctcctcc	gcagcctggg	gtacgcgctg	aagcccggga	300
ggcttggcgc	cggcgaagac	ccaaggacca	ctcttctgcg	tttggagttg	ctccccacaa	360
ccccgggctc	gtcgctttct	ccatccccgac	ccagccgggg	cgcggggaca	acacagggtcg	420
cggaggagcg	ttgccattca	agtgactgca	gcagcagcgg	cagcgcctcg	gttcctgagc	480
ccaccgcagg	ctgaaggcat	tgcgcgtagt	ccatgcccgt	agaggaagtg	tgcagatggg	540
attaacgtcc	acatggagat	atggaagagg	accggggatt	ggtaccgtaa	cc atg gtc	598
					Met Val	
					1	
agc tgg ggt cgt ttc atc tgc ctg gtc gtg gtc acc atg gca acc ttg	646					
Ser Trp Gly Arg Phe Ile Cys Leu Val Val Val Thr Met Ala Thr Leu						
5 10 15						
tcc ctg gcc cgg ccc tcc ttc agt tta gtt gag gat acc aca tta gag	694					
Ser Leu Ala Arg Pro Ser Phe Ser Leu Val Glu Asp Thr Thr Leu Glu						
20 25 30						
cca gaa gag cca cca acc aaa tac caa atc tct caa cca gaa gtg tac	742					
Pro Glu Glu Pro Pro Thr Lys Tyr Gln Ile Ser Gln Pro Glu Val Tyr						
35 40 45 50						
gtg gct gcg cca ggg gag tcg cta gag gtg cgc tgc ctg ttg aaa gat	790					
Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu Lys Asp						
55 60 65						
gcc gcc gtg atc agt tgg act aag gat ggg gtg cac ttg ggg ccc aac	838					
Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly Pro Asn						
70 75 80						
aat agg aca gtg ctt att ggg gag tac ttg cag ata aag ggc gcc acg	886					
Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly Ala Thr						
85 90 95						
cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act gta gac	934					
Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr Val Asp						
100 105 110						
agt gaa act tgg tac ttc atg gtg aat gtc aca gat gcc atc tca tcc	982					
Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile Ser Ser						
115 120 125 130						
gga gat gat gag gat gac acc gat ggt gcg gaa gat ttt gtc agt gag	1030					
Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val Ser Glu						
135 140 145						
aac agt aac aac aag aga gca cca tac tgg acc aac aca gaa aag atg	1078					
Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu Lys Met						
150 155 160						
gaa aag cgg ctc cat gct gtg cct gcg gcc aac act gtc aag ttt cgc	1126					
Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys Phe Arg						
165 170 175						
tgc cca gcc ggg ggg aac cca atg cca acc atg cgg tgg ctg aaa aac	1174					
Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu Lys Asn						
180 185 190						

- 50 -

ggg aag gag ttt aag cag gag cat cgc att gga ggc tac aag gta cga	1222
Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys Val Arg	
195 200 205 210	
aac cag cac tgg agc ctc att atg gaa agt gtg gtc cca tct gac aag	1270
Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser Asp Lys	
215 220 225	
gga aat tat acc tgt gtg gtg gag aat gaa tac ggg tcc atc aat cac	1318
Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile Asn His	
230 235 240	
acg tac cac ctg gat gtt gtg gag cga tcg cct cac cgg ccc atc ctc	1366
Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro Ile Leu	
245 250 255	
caa gcc gga ctg ccg gca aat gcc tcc aca gtg gtc gga gga gac gta	1414
Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly Asp Val	
260 265 270	
gag ttt gtc tgc aag gtt tac agt gat gcc cag ccc cac atc cag tgg	1462
Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp	
275 280 285 290	
atc aag cac gtg gaa aag aac ggc agt aaa tac ggg ccc gac ggg ctg	1510
Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp Gly Leu	
295 300 305	
ccc tac ctc aag gtt ctc aag cac tcg ggg ata aat agt tcc aat gca	1558
Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser Asn Ala	
310 315 320	
gaa gtg ctg gct ctg ttc aat gtg acc gag gcg gat gct ggg gaa tat	1606
Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly Glu Tyr	
325 330 335	
ata tgt aag gtc tcc aat tat ata ggg cag gcc aac cag tct gcc tgg	1654
Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser Ala Trp	
340 345 350	
ctc act gtc ctg cca aaa cag caa gcg cct gga aga gaa aag gag att	1702
Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys Glu Ile	
355 360 365 370	
aca gct tcc cca gac tac ctg gag ata gcc att tac tgc ata ggg gtc	1750
Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile Gly Val	
375 380 385	
ttc tta atc gcc tgt atg gtg gta aca gtc atc ctg tgc cga atg aag	1798
Phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg Met Lys	
390 395 400	
aac acg acc aag aag cca gac ttc agc agc cag ccg gct gtg cac aag	1846
Asn Thr Thr Lys Lys Pro Asp Phe Ser Ser Gln Pro Ala Val His Lys	
405 410 415	
ctg acc aaa cgt atc ccc ctg cgg aga cag gta aca gtt tcg gct gag	1894
Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser Ala Glu	
420 425 430	
tcc agc tcc tcc atg aac tcc aac acc ccg ctg gtg agg ata aca aca	1942
Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile Thr Thr	

- 51 -

435	440	445	450	
cgc ctc tct tca acg gca gac acc ccc atg ctg gca ggg gtc tcc gag				1990
Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val Ser Glu				
	455	460	465	
tat gaa ctt cca gag gac cca aaa tgg gag ttt cca aga gat aag ctg				2038
Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp Lys Leu				
	470	475	480	
aca ctg ggc aag ccc ctg gga gaa ggt tgc ttt ggg caa gtg gtc atg				2086
Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met				
	485	490	495	
gcg gaa gca gtg gga att gac aaa gac aag ccc aag gag gcg gtc acc				2134
Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala Val Thr				
	500	505	510	
gtg gcc gtg aag atg ttg aaa gat gat gcc aca gag aaa gac ctt tct				2182
Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp Leu Ser				
	515	520	525	530
gat ctg gtg tca gag atg gag atg atg aag atg att ggg aaa cac aag				2230
Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys His Lys				
	535	540	545	
aat atc ata aat ctt ctt gga gcc tgc aca cag gat ggg cct ctc tat				2278
Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro Leu Tyr				
	550	555	560	
gtc ata gtt gag tat gcc tct aaa ggc aac ctc cga gaa tac ctc cga				2326
Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr Leu Arg				
	565	570	575	
gcc cgg agg cca ccc ggg atg gag tac tcc tat gac att aac cgt gtt				2374
Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn Arg Val				
	580	585	590	
cct gag gag cag atg acc ttc aag gac ttg gtg tca tgc acc tac cag				2422
Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr Tyr Gln				
	595	600	605	610
ctg gcc aga ggc atg gag tac ttg gct tcc caa aaa tgt att cat cga				2470
Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile His Arg				
	615	620	625	
gat tta gca gcc aga aat gtt ttg gta aca gaa aac aat gtg atg aaa				2518
Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val Met Lys				
	630	635	640	
ata gca gac ttt gga ctc gcc aga gat atc aac aat ata gac tat tac				2566
Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp Tyr Tyr				
	645	650	655	
aaa aag acc acc aat ggg cgg ctt cca gtc aag tgg atg gct cca gaa				2614
Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala Pro Glu				
	660	665	670	
gcc ctg ttt gat aga gta tac act cat cag agt gat gtc tgg tcc ttc				2662
Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp Ser Phe				
	675	680	685	690

- 52 -

ggg gtg tta atg tgg gag atc ttc act tta ggg ggc tcg ccc tac cca	2710
Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro Tyr Pro	
695 700 705	
ggg att ccc gtg gag gaa ctt ttt aag ctg ctg aag gaa gga cac aga	2758
Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly His Arg	
710 715 720	
atg gat aag cca gcc aac tgc acc aac gaa ctg tac atg atg atg agg	2806
Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met Met Arg	
725 730 735	
gac tgt tgg cat gca gtg ccc tcc cag aga cca acg ttc aag cag ttg	2854
Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys Gln Leu	
740 745 750	
gta gaa gac ttg gat cga att ctc act ctc aca acc aat gag gaa tac	2902
Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu Glu Tyr	
755 760 765 770	
ttg gac ctc agc caa cct ctc gaa cag tat tca cct agt tac cct gac	2950
Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr Pro Asp	
775 780 785	
aca aga agt tct tgt tct tca gga gat gat tct gtt ttt tct cca gac	2998
Thr Arg Ser Ser Cys Ser Ser Gly Asp Asp Ser Val Phe Ser Pro Asp	
790 795 800	
ccc atg cct tac gaa cca tgc ctt cct cag tat cca cac ata aac ggc	3046
Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr Pro His Ile Asn Gly	
805 810 815	
agt gtt aaa aca tga atgactgtgt ctgcctgtcc ccaaacagga cagcactggg	3101
Ser Val Lys Thr	
820	
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atatggatca gaggagtaaa taattggaaa agtaatcagc atatgtgtaa agatttatac	3221
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- 53 -

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Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu
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Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly
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Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly
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Ala Thr Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr
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Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile
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- 54 -

Ser Ser Gly Asp Asp Glu Asp Asp Thr Asp Gly Ala Glu Asp Phe Val
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Ser Glu Asn Ser Asn Asn Lys Arg Ala Pro Tyr Trp Thr Asn Thr Glu
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Lys Met Glu Lys Arg Leu His Ala Val Pro Ala Ala Asn Thr Val Lys
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Phe Arg Cys Pro Ala Gly Gly Asn Pro Met Pro Thr Met Arg Trp Leu
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Lys Asn Gly Lys Glu Phe Lys Gln Glu His Arg Ile Gly Gly Tyr Lys
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Val Arg Asn Gln His Trp Ser Leu Ile Met Glu Ser Val Val Pro Ser
 210 215 220

Asp Lys Gly Asn Tyr Thr Cys Val Val Glu Asn Glu Tyr Gly Ser Ile
 225 230 235 240

Asn His Thr Tyr His Leu Asp Val Val Glu Arg Ser Pro His Arg Pro
 245 250 255

Ile Leu Gln Ala Gly Leu Pro Ala Asn Ala Ser Thr Val Val Gly Gly
 260 265 270

Asp Val Glu Phe Val Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile
 275 280 285

Gln Trp Ile Lys His Val Glu Lys Asn Gly Ser Lys Tyr Gly Pro Asp
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Gly Leu Pro Tyr Leu Lys Val Leu Lys His Ser Gly Ile Asn Ser Ser
 305 310 315 320

Asn Ala Glu Val Leu Ala Leu Phe Asn Val Thr Glu Ala Asp Ala Gly
 325 330 335

Glu Tyr Ile Cys Lys Val Ser Asn Tyr Ile Gly Gln Ala Asn Gln Ser
 340 345 350

Ala Trp Leu Thr Val Leu Pro Lys Gln Gln Ala Pro Gly Arg Glu Lys
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Glu Ile Thr Ala Ser Pro Asp Tyr Leu Glu Ile Ala Ile Tyr Cys Ile
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Gly Val phe Leu Ile Ala Cys Met Val Val Thr Val Ile Leu Cys Arg
 385 390 395 400

Met Lys Asn Thr Thr Lys Lys Pro Asp phe Ser Ser Gln Pro Ala Val
 405 410 415

His Lys Leu Thr Lys Arg Ile Pro Leu Arg Arg Gln Val Thr Val Ser
 420 425 430

Ala Glu Ser Ser Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile
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Thr Thr Arg Leu Ser Ser Thr Ala Asp Thr Pro Met Leu Ala Gly Val
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Ser Glu Tyr Glu Leu Pro Glu Asp Pro Lys Trp Glu Phe Pro Arg Asp
 465 470 475 480

Lys Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val
 485 490 495

Val Met Ala Glu Ala Val Gly Ile Asp Lys Asp Lys Pro Lys Glu Ala
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Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Glu Lys Asp
 515 520 525

Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile Gly Lys
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His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Asp Gly Pro
 545 550 555 560

Leu Tyr Val Ile Val Glu Tyr Ala Ser Lys Gly Asn Leu Arg Glu Tyr
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Leu Arg Ala Arg Arg Pro Pro Gly Met Glu Tyr Ser Tyr Asp Ile Asn
 580 585 590

Arg Val Pro Glu Glu Gln Met Thr Phe Lys Asp Leu Val Ser Cys Thr
 595 600 605

Tyr Gln Leu Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys Cys Ile
 610 615 620

- 56 -

His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asn Asn Val
625 630 635 640

Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Ile Asn Asn Ile Asp
645 650 655

Tyr Tyr Lys Lys Thr Thr Asn Gly Arg Leu Pro Val Lys Trp Met Ala
660 665 670

Pro Glu Ala Leu Phe Asp Arg Val Tyr Thr His Gln Ser Asp Val Trp
675 680 685

Ser Phe Gly Val Leu Met Trp Glu Ile Phe Thr Leu Gly Gly Ser Pro
690 695 700

Tyr Pro Gly Ile Pro Val Glu Glu Leu Phe Lys Leu Leu Lys Glu Gly
705 710 715 720

His Arg Met Asp Lys Pro Ala Asn Cys Thr Asn Glu Leu Tyr Met Met
725 730 735

Met Arg Asp Cys Trp His Ala Val Pro Ser Gln Arg Pro Thr Phe Lys
740 745 750

Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Leu Thr Thr Asn Glu
755 760 765

Glu Tyr Leu Asp Leu Ser Gln Pro Leu Glu Gln Tyr Ser Pro Ser Tyr
770 775 780

Pro Asp Thr Arg Ser Ser Cys Ser Ser Gly Asp Asp Ser Val Phe Ser
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Pro Asp Pro Met Pro Tyr Glu Pro Cys Leu Pro Gln Tyr Pro His Ile
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Asn Gly Ser Val Lys Thr
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ttg cgc tgg acc gtc gcc ttg ctc ctc gcc gcg gcg ggg act gca gtg      162
Leu Arg Trp Thr Val Ala Leu Leu Leu Ala Ala Ala Gly Thr Ala Val
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ggc gac aga tgt gaa aga aac gag ttc cag tgc caa gac ggg aaa tgc      210
Gly Asp Arg Cys Glu Arg Asn Glu Phe Gln Cys Gln Asp Gly Lys Cys
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atc tcc tac aag tgg gtc tgc gat ggc agc gct gag tgc cag gat ggc      258
Ile Ser Tyr Lys Trp Val Cys Asp Gly Ser Ala Glu Cys Gln Asp Gly
           40                   45                   50                   55

tct gat gag tcc cag gag acg tgc ttg tct gtc acc tgc aaa tcc ggg      306
Ser Asp Glu Ser Gln Glu Thr Cys Leu Ser Val Thr Cys Lys Ser Gly
           60                   65                   70

gac ttc agc tgt ggg ggc cgt gtc aac cgc tgc att cct cag ttc tgg      354
Asp Phe Ser Cys Gly Gly Arg Val Asn Arg Cys Ile Pro Gln Phe Trp
           75                   80                   85

agg tgc gat ggc caa gtg gac tgc gac aac ggc tca gac gag caa ggc      402
Arg Cys Asp Gly Gln Val Asp Cys Asp Asn Gly Ser Asp Glu Gln Gly
           90                   95                   100

tgt ccc ccc aag acg tgc tcc cag gac gag ttt cgc tgc cac gat ggg      450
Cys Pro Pro Lys Thr Cys Ser Gln Asp Glu Phe Arg Cys His Asp Gly
           105                   110                   115

aag tgc atc tct cgg cag ttc gtc tgt gac tca gac cgg gac tgc ttg      498
Lys Cys Ile Ser Arg Gln Phe Val Cys Asp Ser Asp Arg Asp Cys Leu
           120                   125                   130                   135

gac ggc tca gac gag gcc tcc tgc ccg gtg ctc acc tgt ggt ccc gcc      546
Asp Gly Ser Asp Glu Ala Ser Cys Pro Val Leu Thr Cys Gly Pro Ala
           140                   145                   150

agc ttc cag tgc aac agc tcc acc tgc atc ccc cag ctg tgg gcc tgc      594
Ser Phe Gln Cys Asn Ser Ser Thr Cys Ile Pro Gln Leu Trp Ala Cys
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gac aac gac ccc gac tgc gaa gat ggc tcg gat gag tgg ccg cag cgc      642
Asp Asn Asp Pro Asp Cys Glu Asp Gly Ser Asp Glu Trp Pro Gln Arg
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tgt agg ggt ctt tac gtg ttc caa ggg gac agt agc ccc tgc tcg gcc      690
Cys Arg Gly Leu Tyr Val Phe Gln Gly Asp Ser Ser Pro Cys Ser Ala
           185                   190                   195

ttc gag ttc cac tgc cta agt ggc gag tgc atc cac tcc agc tgg cgc      738
Phe Glu Phe His Cys Leu Ser Gly Glu Cys Ile His Ser Ser Trp Arg
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tgt gat ggt ggc ccc gac tgc aag gac aaa tct gac gag gaa aac tgc      786

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- 58 -

Cys	Asp	Gly	Gly	Pro	Asp	Cys	Lys	Asp	Lys	Ser	Asp	Glu	Glu	Asn	Cys	
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gct	gtg	gcc	acc	tgt	cgc	cct	gac	gaa	ttc	cag	tgc	tct	gat	gga	aac	834
Ala	Val	Ala	Thr	Cys	Arg	Pro	Asp	Glu	Phe	Gln	Cys	Ser	Asp	Gly	Asn	
			235					240					245			
tgc	atc	cat	ggc	agc	cgg	cag	tgt	gac	cgg	gaa	tat	gac	tgc	aag	gac	882
Cys	Ile	His	Gly	Ser	Arg	Gln	Cys	Asp	Arg	Glu	Tyr	Asp	Cys	Lys	Asp	
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atg	agc	gat	gaa	gtt	ggc	tgc	gtt	aat	gtg	aca	ctc	tgc	gag	gga	ccc	930
Met	Ser	Asp	Glu	Val	Gly	Cys	Val	Asn	Val	Thr	Leu	Cys	Glu	Gly	Pro	
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tgc	aac	atg	gct	aga	gac	tgc	cgg	gac	tgg	tca	gat	gaa	ccc	atc	aaa	1026
Cys	Asn	Met	Ala	Arg	Asp	Cys	Arg	Asp	Trp	Ser	Asp	Glu	Pro	Ile	Lys	
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gag	tgc	ggg	acc	aac	gaa	tgc	ttg	gac	aac	aac	ggc	ggc	tgt	tcc	cac	1074
Glu	Cys	Gly	Thr	Asn	Glu	Cys	Leu	Asp	Asn	Asn	Gly	Gly	Cys	Ser	His	
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gtc	tgc	aat	gac	ctt	aag	atc	ggc	tac	gag	tgc	ctg	tgc	ccc	gac	ggc	1122
Val	Cys	Asn	Asp	Leu	Lys	Ile	Gly	Tyr	Glu	Cys	Leu	Cys	Pro	Asp	Gly	
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Phe	Gln	Leu	Val	Ala	Gln	Arg	Arg	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Gln	
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gat	ccc	gac	acc	tgc	agc	cag	ctc	tgc	gtg	aac	ctg	gag	ggc	ggc	tac	1218
Asp	Pro	Asp	Thr	Cys	Ser	Gln	Leu	Cys	Val	Asn	Leu	Glu	Gly	Gly	Tyr	
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Lys	Cys	Gln	Cys	Glu	Glu	Gly	Phe	Gln	Leu	Asp	Pro	His	Thr	Lys	Ala	
				380					385					390		
tgc	aag	gct	gtg	ggc	tcc	atc	gcc	tac	ctc	ttc	ttc	acc	aac	cgg	cac	1314
Cys	Lys	Ala	Val	Gly	Ser	Ile	Ala	Tyr	Leu	Phe	Phe	Thr	Asn	Arg	His	
			395					400					405			
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Glu	Val	Arg	Lys	Met	Thr	Leu	Asp	Arg	Ser	Glu	Tyr	Thr	Ser	Leu	Ile	
		410					415					420				
ccc	aac	ctg	agg	aac	gtg	gtc	gct	ctg	gac	acg	gag	gtg	gcc	agc	aat	1410
Pro	Asn	Leu	Arg	Asn	Val	Val	Ala	Leu	Asp	Thr	Glu	Val	Ala	Ser	Asn	
	425					430					435					
aga	atc	tac	tgg	tct	gac	ctg	tcc	cag	aga	atg	atc	tgc	agc	acc	cag	1458
Arg	Ile	Tyr	Trp	Ser	Asp	Leu	Ser	Gln	Arg	Met	Ile	Cys	Ser	Thr	Gln	
440					445				450						455	
ctt	gac	aga	gcc	cac	ggc	gtc	tct	tcc	tat	gac	acc	gtc	atc	agc	agg	1506
Leu	Asp	Arg	Ala	His	Gly	Val	Ser	Ser	Tyr	Asp	Thr	Val	Ile	Ser	Arg	
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- 59 -

gac atc cag gcc ccc gac ggg ctg gct gtg gac tgg atc cac agc aac Asp Ile Gln Ala Pro Asp Gly Leu Ala Val Asp Trp Ile His Ser Asn 475 480 485	1554
atc tac tgg acc gac tct gtc ctg ggc act gtc tct gtt gcg gat acc Ile Tyr Trp Thr Asp Ser Val Leu Gly Thr Val Ser Val Ala Asp Thr 490 495 500	1602
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tcc cca gag gat atg gtc ctc ttc cac aac ctc acc cag cca aga gga Ser Pro Glu Asp Met Val Leu Phe His Asn Leu Thr Gln Pro Arg Gly 650 655 660	2082
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ctc aca gag gct gag gct gca gtg gcc acc cag gag aca tcc acc gtc	2274

- 61 -

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- 62 -

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<400> 28

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Gln Cys Gln Asp Gly Lys Cys Ile Ser Tyr Lys Trp Val Cys Asp Gly
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Ser Ala Glu Cys Gln Asp Gly Ser Asp Glu Ser Gln Glu Thr Cys Leu
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Ser Val Thr Cys Lys Ser Gly Asp Phe Ser Cys Gly Gly Arg Val Asn
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Arg Cys Ile Pro Gln Phe Trp Arg Cys Asp Gly Gln Val Asp Cys Asp
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Asn Gly Ser Asp Glu Gln Gly Cys Pro Pro Lys Thr Cys Ser Gln Asp
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Glu Phe Arg Cys His Asp Gly Lys Cys Ile Ser Arg Gln Phe Val Cys
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Asp Ser Asp Arg Asp Cys Leu Asp Gly Ser Asp Glu Ala Ser Cys Pro
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Val Leu Thr Cys Gly Pro Ala Ser Phe Gln Cys Asn Ser Ser Thr Cys
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Ile Pro Gln Leu Trp Ala Cys Asp Asn Asp Pro Asp Cys Glu Asp Gly
 165 170 175

Ser Asp Glu Trp Pro Gln Arg Cys Arg Gly Leu Tyr Val Phe Gln Gly
 180 185 190

Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser Gly Glu
 195 200 205

Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys Lys Asp
 210 215 220

- 63 -

Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro Asp Glu
 225 230 235 240

Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln Cys Asp
 245 250 255

Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys Val Asn
 260 265 270

Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser Gly Glu
 275 280 285

Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys Arg Asp
 290 295 300

Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys Leu Asp
 305 310 315 320

Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile Gly Tyr
 325 330 335

Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg Arg Cys
 340 345 350

Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln Leu Cys
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Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly Phe Gln
 370 375 380

Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile Ala Tyr
 385 390 395 400

Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu Asp Arg
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Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val Ala Leu
 420 425 430

Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu Ser Gln
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Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val Ser Ser
 450 455 460

Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly Leu Ala

- 64 -

465		470		475		480
Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val Leu Gly						
		485		490		495
Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr Leu Phe						
		500		505		510
Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro Val His						
		515		520		525
Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile Lys Lys						
		530		535		540
Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu Asn Ile						
		545		550		555
				555		560
Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg Leu Tyr						
		565		570		575
Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val Asn Gly						
		580		585		590
Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala His Pro						
		595		600		605
Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp Ile Ile						
		610		615		620
Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp Val Asn						
		625		630		635
				635		640
Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu Phe His						
		645		650		655
Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr Thr Leu						
		660		665		670
Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln Ile Asn						
		675		680		685
Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met Leu Leu						
		690		695		700
Ala Arg Asp Met Arg Ser Cys Leu Thr Glu Ala Glu Ala Ala Val Ala						
		705		710		715
				715		720

- 65 -

Thr Gln Glu Thr Ser Thr Val Arg Leu Lys Val Ser Ser Thr Ala Val
725 730 735

Arg Thr Gln His Thr Thr Thr Arg Pro Val Pro Asp Thr Ser Arg Leu
740 745 750

Pro Gly Ala Thr Pro Gly Leu Thr Thr Val Glu Ile Val Thr Met Ser
755 760 765

His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys Lys Pro
770 775 780

Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu Leu Val
785 790 795 800

Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg Leu Lys
805 810 815

Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys Thr Thr
820 825 830

Glu Asp Glu Val His Ile Cys His Asn Gln Asp Gly Tyr Ser Tyr Pro
835 840 845

Ser Arg Gln Met Val Ser Leu Glu Asp Asp Val Ala
850 855 860

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<211> 2070
<212> DNA
<213> Homo sapiens

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- 66 -

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<220>
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- 68 -

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Val Ala Pro Gly Glu Ser Leu Thr Leu Gln Cys Val Ser Asp Val Gly	
235 240 245	
tac gac aga ttt gtt ctg tat aag gag gga gaa cgt gac ttc ctc cag	882
Tyr Asp Arg Phe Val Leu Tyr Lys Glu Gly Glu Arg Asp Phe Leu Gln	
250 255 260 265	
cgc cct ggt tgg cag ccc cag gct ggg ctc tcc cag gcc aac ttc acc	930
Arg Pro Gly Trp Gln Pro Gln Ala Gly Leu Ser Gln Ala Asn Phe Thr	
270 275 280	
ctg ggc cct gtg agc ccc tcc cac ggg ggc cag tac aga tgc tac agt	978
Leu Gly Pro Val Ser Pro Ser His Gly Gly Gln Tyr Arg Cys Tyr Ser	
285 290 295	
gca cac aac ctc tcc tcc gag tgg tgc gcc ccc agt gac ccc ctg gac	1026
Ala His Asn Leu Ser Ser Glu Trp Ser Ala Pro Ser Asp Pro Leu Asp	
300 305 310	
atc ctg atc aca gga cag ttc tat gac aga ccc tct ctc tgc gtg cag	1074
Ile Leu Ile Thr Gly Gln Phe Tyr Asp Arg Pro Ser Leu Ser Val Gln	
315 320 325	
ccg gtc ccc aca gta gcc cca gga aag aac gtg acc ctg ctg tgt cag	1122
Pro Val Pro Thr Val Ala Pro Gly Lys Asn Val Thr Leu Leu Cys Gln	
330 335 340 345	
tca cgg ggg cag ttc cac act ttc ctt ctg acc aag gag ggg gca ggc	1170
Ser Arg Gly Gln Phe His Thr Phe Leu Leu Thr Lys Glu Gly Ala Gly	
350 355 360	
cat ccc cca ctg cat ctg aga tca gag cac caa gct cag cag aac cag	1218
His Pro Pro Leu His Leu Arg Ser Glu His Gln Ala Gln Gln Asn Gln	
365 370 375	
gct gaa ttc cgc atg ggt cct gtg acc tca gcc cac gtg ggg acc tac	1266
Ala Glu Phe Arg Met Gly Pro Val Thr Ser Ala His Val Gly Thr Tyr	
380 385 390	
aga tgc tac agc tca ctc agc tcc aac ccc tac ctg ctg tct ctc ccc	1314
Arg Cys Tyr Ser Ser Leu Ser Ser Asn Pro Tyr Leu Leu Ser Leu Pro	
395 400 405	
agt gac ccc ctg gag ctc gtg gtc tca gca tcc cta ggc caa cac ccc	1362
Ser Asp Pro Leu Glu Leu Val Val Ser Ala Ser Leu Gly Gln His Pro	
410 415 420 425	
cag gat tac aca gtg gag aat ctc atc cgc atg ggt gtg gct ggc ttg	1410
Gln Asp Tyr Thr Val Glu Asn Leu Ile Arg Met Gly Val Ala Gly Leu	
430 435 440	
gtc ctg gtg gtc ctc ggg att ctg cta ttt gag gct cag cac agc cag	1458
Val Leu Val Val Leu Gly Ile Leu Leu Phe Glu Ala Gln His Ser Gln	
445 450 455	
aga agc cta caa gat gca gcc ggg agg tga acagcagaga ggacaatgca	1508
Arg Ser Leu Gln Asp Ala Ala Gly Arg	
460 465	
tacttcagcg tgggtggagcc tcagggacag atctgatgat cccaggaggc tctggaggac	1568

- 69 -

aatctaggac ctacattatc tggactgtat gctgggtcatt tctagagaca gcaatcaata 1628
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<210> 31
 <211> 466
 <212> PRT
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<400> 31

Met Thr Pro Ile Leu Thr Val Leu Ile Cys Leu Gly Leu Ser Leu Gly
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Pro Arg Thr His Val Gln Ala Gly His Leu Pro Lys Pro Thr Leu Trp
 20 25 30

Ala Glu Pro Gly Ser Val Ile Ile Gln Gly Ser Pro Val Thr Leu Arg
 35 40 45

Cys Gln Gly Ser Leu Gln Ala Glu Glu Tyr His Leu Tyr Arg Glu Asn
 50 55 60

Lys Ser Ala Ser Trp Val Arg Arg Ile Gln Glu Pro Gly Lys Asn Gly
 65 70 75 80

Gln Phe Pro Ile Pro Ser Ile Thr Trp Glu His Ala Gly Arg Tyr His
 85 90 95

Cys Gln Tyr Tyr Ser His Asn His Ser Ser Glu Tyr Ser Asp Pro Leu
 100 105 110

Glu Leu Val Val Thr Gly Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu
 115 120 125

Pro Ser Pro Val Val Thr Leu Gly Gly Asn Val Thr Leu Gln Cys Val
 130 135 140

Ser Gln Val Ala Phe Asp Gly Phe Ile Leu Cys Lys Glu Gly Glu Asp
 145 150 155 160

Glu His Pro Gln Arg Leu Asn Ser His Ser His Ala Arg Gly Trp Ser
 165 170 175

Trp Ala Ile Phe Ser Val Gly Pro Val Ser Pro Ser Arg Arg Trp Ser
 180 185 190

- 70 -

Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn Ser Pro Tyr Val Trp Ser Leu
 195 200 205

Pro Ser Asp Leu Leu Glu Leu Leu Val Pro Gly Val Ser Lys Lys Pro
 210 215 220

Ser Leu Ser Val Gln Pro Gly Pro Met Val Ala Pro Gly Glu Ser Leu
 225 230 235 240

Thr Leu Gln Cys Val Ser Asp Val Gly Tyr Asp Arg Phe Val Leu Tyr
 245 250 255

Lys Glu Gly Glu Arg Asp Phe Leu Gln Arg Pro Gly Trp Gln Pro Gln
 260 265 270

Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser Pro Ser
 275 280 285

His Gly Gly Gln Tyr Arg Cys Tyr Ser Ala His Asn Leu Ser Ser Glu
 290 295 300

Trp Ser Ala Pro Ser Asp Pro Leu Asp Ile Leu Ile Thr Gly Gln Phe
 305 310 315 320

Tyr Asp Arg Pro Ser Leu Ser Val Gln Pro Val Pro Thr Val Ala Pro
 325 330 335

Gly Lys Asn Val Thr Leu Leu Cys Gln Ser Arg Gly Gln Phe His Thr
 340 345 350

Phe Leu Leu Thr Lys Glu Gly Ala Gly His Pro Pro Leu His Leu Arg
 355 360 365

Ser Glu His Gln Ala Gln Gln Asn Gln Ala Glu Phe Arg Met Gly Pro
 370 375 380

Val Thr Ser Ala His Val Gly Thr Tyr Arg Cys Tyr Ser Ser Leu Ser
 385 390 395 400

Ser Asn Pro Tyr Leu Leu Ser Leu Pro Ser Asp Pro Leu Glu Leu Val
 405 410 415

Val Ser Ala Ser Leu Gly Gln His Pro Gln Asp Tyr Thr Val Glu Asn
 420 425 430

Leu Ile Arg Met Gly Val Ala Gly Leu Val Leu Val Val Leu Gly Ile

- 71 -

435

440

445

Leu Leu Phe Glu Ala Gln His Ser Gln Arg Ser Leu Gln Asp Ala Ala
450 455 460

Gly Arg
465